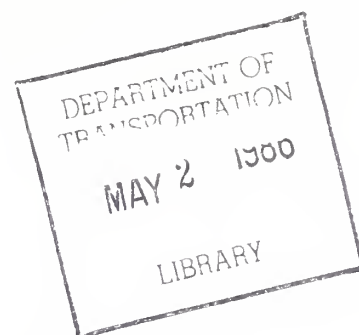


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U.S. Department
of Transportation
**National Highway
Traffic Safety
Administration**



DOT HS 806 850

December 1984

Side Impact Aggressiveness Attributes: MDB-to-Car Side Impact Test of a 19° Crabbed Moving Deformable Barrier to a 1981 Volkswagen Rabbit at 46.0 mph.

The United States Government does not endorse products or manufacturers. Trade or manufacturers' names appear only because they are considered essential to the object of this report.

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				6. Performing Organization Code	
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16. Abstract This test report documents one of a series of twelve crash tests to evaluate the side impact aggressiveness attributes of various deformable barrier face configurations. The configurations to be used are designated as "Lowered Stiffness", "Altered Profile" and "Lowered Bumper". Testing was conducted on a 1981 baseline Volkswagen Rabbit 2-door hatchback at the TRCO Crash Test Facility, East Liberty, Ohio. The test vehicle was impacted on the left side by a moving deformable barrier designated as "Lowered Bumper", crabbled to 19°, at 46.0 mph. Occupant responses of two side impact dummies were measured. One dummy was located in the driver's designated seating position and one was located in the left rear passenger position. The test date was November 9, 1984 and the ambient temperature was 55° F.					
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SECTION 1.0
PURPOSE AND INTRODUCTION

PURPOSE

The main purpose of this test was to evaluate the side impact aggressiveness of a deformable barrier face designated as "Lowered Bumper". In all, there will be twelve crash tests involving deformable barrier faces designated as "Lowered Stiffness", "Altered Profile" and "Lowered Bumper". The vehicle was tested using conditions not currently contained in a Federal Motor Vehicle Safety Standard.

INTRODUCTION

A stationary 1981 Volkswagen Rabbit 2-door hatchback was impacted on the left side by a Moving Deformable Barrier (MDB) on November 9, 1984. The test was to simulate an intersection collision with the striking vehicle traveling at 35 mph and the struck vehicle traveling at 17.5 mph. The orientation angle of the striking vehicle was 60° counterclockwise with respect to the longitudinal axis of the struck vehicle. The impact point was to be 37 inches forward of the vehicle center of gravity which is defined by accident investigation to be the midpoint of the wheelbase.

To simulate this collision, the MDB was to be towed into the stationary Volkswagen Rabbit at 46.3 mph with the MDB's wheels crabbed clockwise to 19°. The actual test speed was 46.0 mph and the actual impact point was 37.5 inches forward of the midpoint of the Volkswagen Rabbit's wheelbase. The vehicle was structurally unmodified and contained no additional padding.

Section 2 contains General Test and Vehicle Parameter Data. Section 3 contains data required by R & D. Appendix A contains pre-test and post-test vehicle and dummy photographs. Appendix B contains Data Plots. Appendix C contains dummy certification data.

SECTION 2.0
GENERAL TEST AND VEHICLE PARAMETER DATA

The following data sheets describe the General Test and Vehicle Parameter Data.

TEST VEHICLE INFORMATION

VEHICLE MANUFACTURER: Volkswagen of America, Inc.

MAKE/MODEL: Volkswagen Rabbit

VIN: 1VWCB9178BV070517

BODY STYLE: 2-Door Hatchback

MODEL YEAR: 1981

NHTSA NO.: R & D

COLOR: Grey

ENGINE DATA: TYPE: Transverse CYLINDERS: 4 DISPLACEMENT 1600 cc

TRANSMISSION DATA: 4 Speed Manual

DATE VEHICLE RECEIVED: 10/24/84

ODOMETER READING: 60496

DEALER'S NAME AND ADDRESS: Volkswagen North
Worthington, Ohio

ACCESSORIES:

POWER STEERING	No	AUTOMATIC TRANSMISSION	No
POWER BRAKES	Yes	AUTOMATIC SPEED CONTROL	No
POWER SEATS	No	TILTING STEERING WHEEL	No
POWER WINDOWS	No	TELESCOPING STEERING WHEEL	No
TINTED GLASS	Yes	AIR CONDITIONING	Yes
RADIO	No	ANTI-SKID BRAKE	No
CLOCK	No	REAR WINDOW DEFROSTER	Yes
OTHER			

REMARKS:

1. IS THE VEHICLE STOCK THROUGHOUT? Yes
2. DOES VEHICLE SHOW EVIDENCE OF PRIOR ACCIDENT HISTORY? No
3. DOES VEHICLE SHOW ANY SIGNIFICANT CORROSION? No
4. CONDITION OF THE FRONT/REAR BUMPER AND FRAME: Good

DATA FROM CERTIFICATION LABEL ON LEFT DOOR FACE OR "B" POST:

VEHICLE MANUFACTURED BY: Volkswagen of America, Inc.

DATE OF MANUFACTURE: 1/81

GVWR: 2822 LBS.,

GAWR: FRONT 1609 LBS., REAR 1278 LBS.

VEHICLE TIRE DATA

RECOMMENDED COLD TIRE PRESSURE: FRONT 27 psi; REAR 31 psi

TIRES ON VEHICLE (MFGR. & LINE, SIZE): Michelin XZX 155 SR 13

BIAS PLY, BELTED, OR RADIAL: Radial

PLY RATING: 3

IS SPARE TIRE "SPACE SAVER"? No

IS SPARE TIRE STANDARD EQUIPMENT? No

WEIGHT OF TEST VEHICLE AS RECEIVED FROM DEALER (WITH ESTIMATED FLUIDS):

RIGHT FRONT	690	LBS.	RIGHT REAR	368	LBS.
LEFT FRONT	685	LBS.	LEFT REAR	363	LBS.
TOTAL FRONT WEIGHT	1375		LBS. (65.3 % OF TOTAL VEHICLE WEIGHT)		
TOTAL REAR WEIGHT	731		LBS. (34.7 % OF TOTAL VEHICLE WEIGHT)		
TOTAL DELIVERED WEIGHT	2106		LBS.		

VEHICLE ATTITUDE (ALL DIMENSIONS IN INCHES):

DELIVERED ATTITUDE:	RF 23 3/4	;LF 23 3/8	;RR 24	;LR 23 11/16
PRE-TEST ATTITUDE:	RF 23 1/8	;LF 22 7/8	;RR 21 7/8	;LR 21 1/8
POST-TEST ATTITUDE:	RF 23 5/8	;LF 23 1/2	;RR 22 3/16	;LR 21 1/8

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND 135 LBS. CARGO:

RIGHT FRONT	720	LBS.	RIGHT REAR	520	LBS.
LEFT FRONT	770	LBS.	LEFT REAR	580	LBS.
TOTAL FRONT WEIGHT	1490		LBS. (57.5 % OF TOTAL VEHICLE WEIGHT)		
TOTAL REAR WEIGHT	1100		LBS. (42.5 % OF TOTAL VEHICLE WEIGHT)		
TOTAL TEST WEIGHT	2590		LBS.		

WEIGHT OF BALLAST SECURED IN VEHICLE TRUNK AREA: 0 LBS.

TEST FLUID DATA

TEST FLUID TYPE: RED STODDARD SOLVENT #2; SPEC. GRAVITY: 0.764

KINEMATIC VISCOSITY: 0.99 CENTISTOKES

"USEABLE" CAPACITY*: NA GALLONS

TEST VOLUME: 2.0 GALLONS

FUEL SYSTEM CAPACITY (DATA FROM OWNERS MANUAL): 10.0 GALLONS

DETAILS OF FUEL SYSTEM: DNA

ELECTRIC FUEL PUMP: Yes

FUEL INJECTION: Yes

DOES ELECTRIC FUEL PUMP OPERATE WITH IGNITION SWITCH "ON" AND THE ENGINE NOT OPERATING? No

DATA FROM "RECOMMENDED TIRE PRESSURE" LABEL ON DOOR, POST, GLOVEBOX, ETC.

VEHICLE LOAD (UP TO CAPACITY): FRONT 27 psi; REAR 31 psi

RECOMMENDED TIRE SIZE: 155 SR 13 LOAD RANGE X B, C,

VEHICLE CAPACITY:

TYPES OF SEATS:

Front - Bucket
Rear - Bench

NUMBER OF OCCUPANTS (DESIGNATED SEATING CAPACITY): 2 FRONT

2 REAR

CARGO LOAD 135 LBS.

4 TOTAL

TOTAL 735 LBS.

*WITH ENTIRE FUEL SYSTEM FILLED WITH FUEL TANK THROUGH CARBURETOR BOWL.

TEST CONDITIONS

TEST NUMBER: 841109

DATE OF TEST: November 9, 1984

TIME OF TEST: 11:15

WIND VELOCITY: 9-18 mph 189° S

HUMIDITY: DNA

AMBIENT TEMPERATURE AT IMPACT AREA: 55° F

TEMPERATURE IN OCCUPANT COMPARTMENT: 78° F

SUBJECT VEHICLE DATA

	<u>ACTUAL</u>	<u>INTENDED</u>
VEHICLE TEST WEIGHT (LBS.)	2590	2589
MDB TEST WEIGHT (LBS.)	2990	3000
MDB VELOCITY (MPH)*	46.0	46.3
IMPACT POINT (INCHES)**	37.5	37.0

DUMMIES

	<u>DRIVER</u>	<u>MIDDLE PASSENGER</u>	<u>RT. FRONT PASSENGER</u>	<u>LEFT REAR PASSENGER</u>	<u>RT. REAR PASSENGER</u>
TYPE:	SID			SID	
SERIAL NO.:	06			U02	
INSTRUMENTATION:					
HEAD ACCEL.:	Yes			Yes	
CHEST ACCEL.:	Yes (Upper/Lower)			Yes (Upper/Lower)	
FEMUR L.C.'S:	No			No	
OTHER:	Pelvis/Ribs			Pelvis/Ribs	

RESTRAINT SYSTEM: Both dummies were unrestrained

* As measured over final one foot of travel.

** As measured forward of the midpoint of the vehicle's wheelbase.

VISIBLE DUMMY CONTACT POINTS:

	DRIVER 06	PASSENGER U02
Head	<u>Side Mirror, Barrier Top, Roof, Left Door Panel, Ground</u>	<u>Side Header, Roof</u>
Chest	<u>Left Inner Door Panel, Ground</u>	<u>Left Rear Quarter Panel</u>
Abdomen	<u>Left Inner Door Panel, Ground</u>	<u>Left Rear Quarter Panel</u>
Left Knee	<u>Left Inner Door Panel, Ground</u>	<u>Left Rear Quarter Panel</u>
Right Knee	<u>Left Knee, Ground</u>	<u>Left Knee</u>

DOOR OPENING:

	LEFT	RIGHT
Front	<u>Door Separated from Vehicle At A-Pillar</u>	<u>Easy</u>
Rear	<u>DNA</u>	<u>DNA</u>

SEAT MOVEMENT:

	SEAT BACK FAILURE	SEAT SHIFT
Front	<u>Yes</u>	<u>No</u>
Rear	<u>No</u>	<u>No</u>

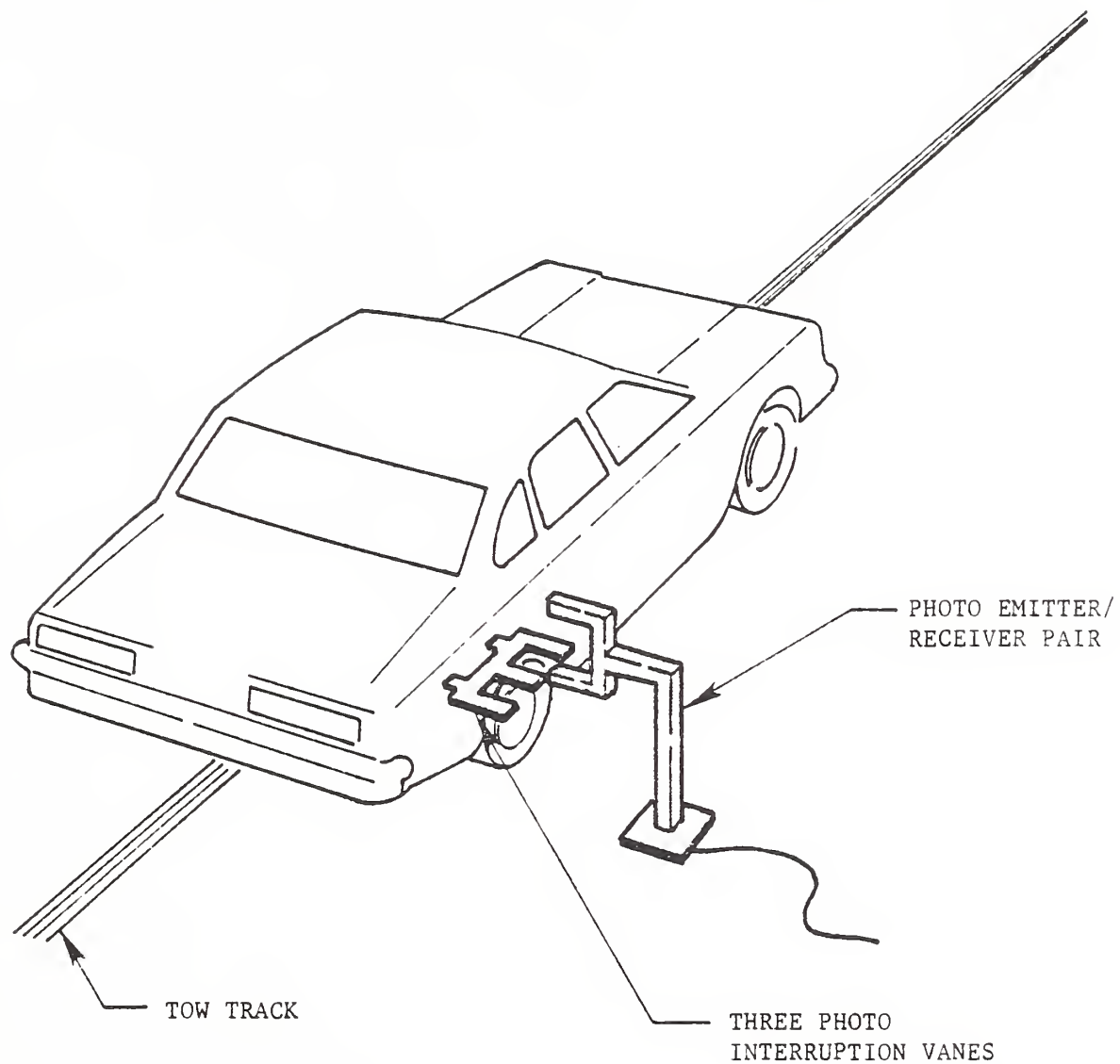
GLAZING DAMAGE: Windshield cracked, left side windows shattered.

OTHER NOTABLE IMPACT EFFECTS:

Left side door separated from car at A-Pillar, driver's

seat bottom damaged.

IMPACT VELOCITY MEASUREMENT SYSTEM



The final vane is located two inches before impact.

The vanes have one foot spacing.

VEHICLE TEST WEIGHT CALCULATION

$$\begin{aligned}\text{Test Weight} &= \text{Unloaded Delivered Weight}^* + \\ &\quad \text{Number of Dummies X 174 lbs.} + \\ &\quad \text{Cargo Weight} \\ &= 2106 + 2 \times 174 + 135 \text{ lbs.} \\ &= 2589 \text{ lbs.}\end{aligned}$$

To achieve test weight, the battery was removed and 2.0 gallons of Stoddard Solvent were added in the fuel tank. The weight of the test vehicle was measured by placing each wheel on a Loadmeter Corporation Hiway Loadometer.

$$\begin{aligned}\text{*Unloaded Delivered Weight} &= \text{Measured Weight} + \text{Estimated 10 Gallons Fuel} \\ &= 2046 + 60 \text{ lbs} \\ &= 2106 \text{ lbs}\end{aligned}$$

TEST ANOMALIES

The potentiometer in the passenger's chest, LRTDY3, broke during the test.

A cable to the accelerometer in the left front sill, LFSYG5, was severed during the test.

The left front door accelerometer in position 11, LFDYG5, had pinched wires occasionally throughout the test.

All the accelerometers in the driver's pelvis, PEVXG1, PEVYG1, PEVZG1, underwent severe rattling approximately 40-50 msec after impact.

SECTION 3.0
DATA REQUIRED BY R & D

The following pages are included in this section:

1. Dummy temperature control and position data
2. Dummy kinematic summary
3. Vehicle crush data
4. Dummy and vehicle accelerometer location and data summary
5. High speed camera information
6. Transducer information

DUMMY TEMPERATURE CONTROL AND POSITIONING

The vehicle was kept inside the temperature controlled crash test building until approximately 2 hours prior to the test. Temperature inside the vehicle and ambient temperature at the crash area were recorded. Dummy temperature while outside the crash test building was maintained portably until approximately 1 minute prior to the test.

The following table summarizes the steps taken to position the instrumented, calibrated dummies in the test vehicle.

DUMMY PLACEMENT AND POSITIONING

SIDE IMPACT DUMMY

DRIVER DSP

HEAD	Surface of transverse instrument mounting platform is as horizontal as possible without inducing torso movement & midsagittal plane falls in longitudinal plane.
UPPER TORSO	Placed against seat back. Midsagittal plane is vertical and centered on bucket seat.
LOWER TORSO	Midsagittal plane is vertical and centered on bucket seat.
UPPER LEGS (thighs or femurs)	Placed against seat cushion. Planes defined by femur and tibia centerlines are as close as possible to vertical.
KNEES	Knees set 14.5" apart between pivot bolt head outer surfaces. Outer surface of right knee pivot bolt is 8.6" from midsagittal plane of dummy. Outer surface of left knee pivot bolt is 5.9" from midsagittal plane of dummy.
LOWER LEGS	Plane defined by femur and tibia centerlines are as close as possible to vertical longitudinal plane.
RIGHT FOOT	Placed on undepressed accelerator pedal -- rearmost point of heel on floorplan in plane of pedal.
LEFT FOOT	Placed on toeboard -- rearmost point of heel on floorpan as close as possible to intersection of toeboard and floorpan. Centerline falls in vertical longitudinal plane.

REAR PASSENGER DSP

Surface of transverse instrument mounting platform is as horizontal as possible without inducing torso movement & midsagittal plane falls in longitudinal plane.

Placed against seat back. Midsagittal plane is vertical and contained in the same longitudinal plane as the driver's midsagittal plane.

Midsagittal plane is vertical and contained in the same longitudinal plane as the driver's midsagittal plane.

Placed against seat cushion. Planes defined by femur and tibia centerlines are as close as possible to vertical.

Located so that planes defined by femur and tibia centerlines are as close as possible to vertical.

Plane defined by femur and tibia centerlines are as close as possible to vertical longitudinal plane.

Centerline falls in vertical longitudinal plane. Placed on floor as far forward as possible without front seat interference.

Centerline falls in vertical longitudinal plane. Placed on floor as far forward as possible without front seat interference.

*NOTE: THE SIDE IMPACT DUMMY DOES NOT INCLUDE ARMS.

DUMMY IN-VEHICLE POSITION RECORDING SHEET

VEHICLE NHTSA NO. R & D

MFR./MAKE/MODEL: Volkswagen Rabbit

FRONT SEAT TYPE: BENCH
 X BUCKET
 SPLIT BENCH

ADJUSTER TYPE: X MANUAL
 POWER

BUCKET SEAT BACK TYPE: FIXED
 X ADJUSTABLE

TECHNICIANS:

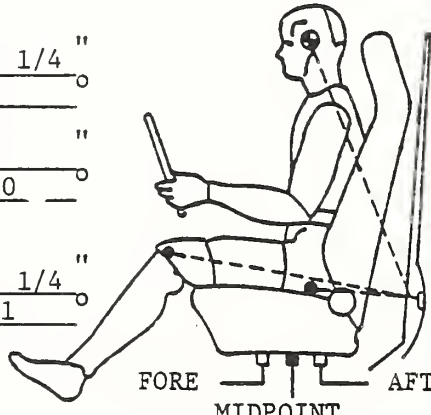
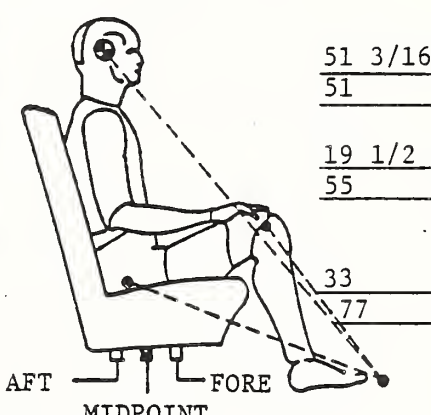
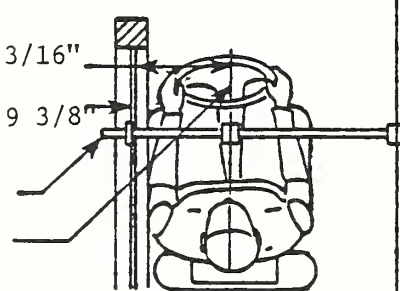
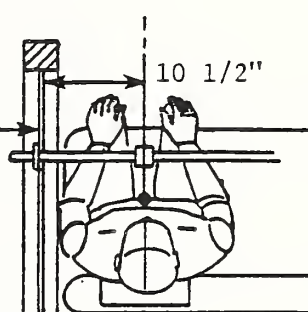
1. D. LeVally

2. B. Miller

3. B. Fishbaugh

POSITIONING DATE: 11/9/84

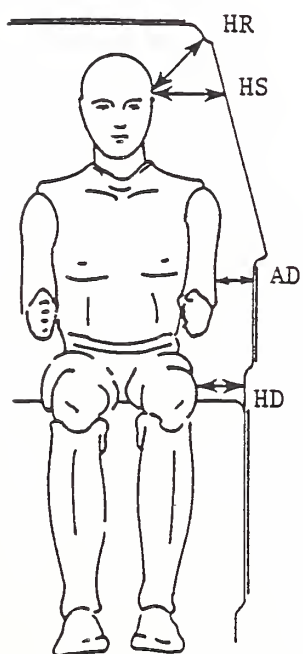
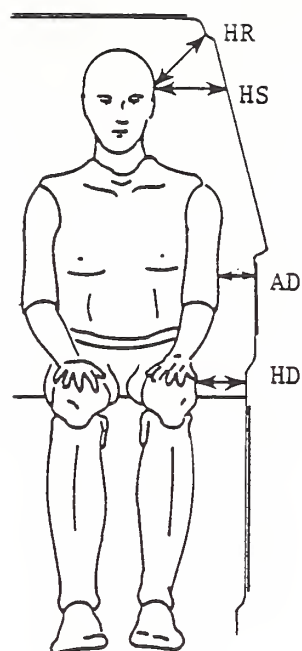
AMBIENT TEMP.: 74° F. TIME: 7:45

<p>DRIVER DUMMY # 06</p> <div style="display: flex; align-items: flex-start;"> <div style="flex: 1;"> <p>HEAD <u>20 1/4</u> "° TARGET*<u>40</u> "°</p> <p>KNEE <u>33</u> "° JOINT <u>100</u> "°</p> <p>APPROX. "H" <u>20 1/4</u> "° POINT <u>121</u> "°</p> </div> <div style="flex: 2;">  </div> </div>	<p>REAR PASSENGER DUMMY # U02</p> <div style="display: flex; align-items: flex-start;"> <div style="flex: 1;"> <p><u>51 3/16</u> "°HEAD <u>51</u> "°TARGET**</p> <p><u>19 1/2</u> "°KNEE <u>55</u> "°JOINT</p> <p>APPROX. "H" <u>33</u> "° POINT <u>77</u> "°</p> </div> <div style="flex: 2;">  </div> </div>
<div style="display: flex; align-items: center;"> <div style="flex: 1;"> <p>DOOR GLASS HEIGHT*** <u>12 3/16</u> "°</p> <p><u>9 3/8</u> "°</p> <p>LATERAL BAR ADJUSTABLE POINTER</p> </div> <div style="flex: 2;">  </div> </div> <p style="text-align: center;">DRIVER DUMMY # 06</p>	<div style="display: flex; align-items: center;"> <div style="flex: 1;"> <p>DOOR GLASS HEIGHT <u>10 1/2</u> "°</p> <p>DNA</p> </div> <div style="flex: 2;">  </div> </div> <p style="text-align: center;">PASSENGER DUMMY # U02</p>

*All driver dummy dimensions referenced to top of striker bolt and all angles referenced to vertical.

**All passenger dummy dimensions referenced to front seat back latch bolt with front seat in mid-position and all angles referenced to vertical.

***Door glass height is equal on the right and left side of vehicle at dummy nose level.



DRIVER

PASSENGER

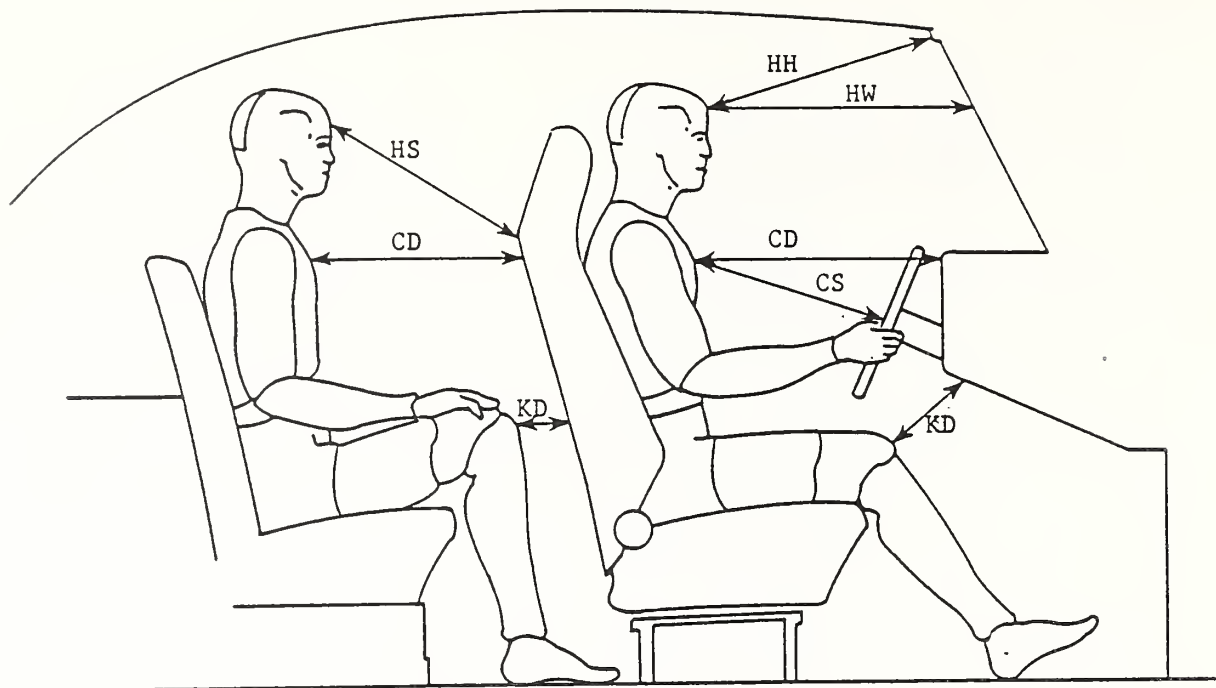
06

U02

	DRIVER 06	PASSENGER U02
HR	7	6 1/16
HS	8 1/4	8
AD	3 5/8	4 3/8
HD	5 1/4	5 5/16

ALL MEASUREMENTS IN INCHES

DUMMY LATERAL CLEARANCE DIMENSIONS



DRIVER

PASSENGER

06

U02

HH	15 3/8	DNA
HW	19 5/16	DNA
HS	DNA	24 5/8
CD	20 15/16	17 1/2
CS	14 9/16	DNA
KDL	4 5/16	3 3/16
KDR	4 13/16	2 15/16

ALL MEASUREMENTS IN INCHES

DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

DUMMY KINEMATIC SUMMARY

DRIVER

During impact, the dash panel below the steering column burst inward hitting the dummy's knees. The left hip of the dummy contacted the inner panel as the door caved in. As the buttocks swung to the right, the dummy's left shoulder and chest contacted the window sill and door panel. The head went outside the vehicle's boundaries contacting the side mirror and barrier top. As the torso lifted and travelled to the passenger side of the car, the dummy's head and shoulders contacted the roof and the buttocks travelled outside the passenger's front window. The dummy then moved back to the left side of the compartment. The driver somersaulted outside the vehicle boundaries hitting his head on the left door panel as the door separated from the car. Final resting position showed the dummy lying on his side with his legs outstretched at a right angle from the torso.

PASSENGER

During impact, the back of the driver's seat contacted the passenger's knees forcing them to the right. At the same time, the B-pillar crushed in, hitting the dummy's left knee and calf. As the left leg and hip rebounded from the door panel towards the right, the dummy's torso leaned left. The passenger's head then hit the side header and roof. The dummy came to rest in an upright position with his legs twisted to the right and his upper torso leaning left.

VEHICLE EXTERIOR PROFILES AND STATIC CRUSH
ZERO DISTANCE AT PROJECTED IMPACT POINT*

LOCATION	HEIGHT (in)	6	0	6	12	18	24	30	36	42	48	54	60	66	72	78
		PRE-TEST PROFILE (DISTANCE IN INCHES FROM REFERENCE PLANE**)														
Axle Height	11.5	X	X	20.0	20.1	19.9	19.9	20.0	20.0	20.0	20.1	20.1	20.1	20.1	X	X
H-Point	20.0	X		17.1	17.9	17.8	17.8	17.8	17.8	17.9	17.9	18.1	18.1	18.3	17.8	X
Mid Door	24.3	16.6	17.9	17.7	17.6	17.5	17.5	17.5	17.5	17.6	17.6	17.7	17.8	17.9	18.1	16.6
Window Sill	34.9	19.9	19.6	19.5	19.2	19.3	19.0	19.1	19.1	19.1	19.1	19.1	19.3	19.3	19.3	19.5
Window Top	54.5	X	X	X	X	X	27.1	26.8	26.8	26.6	26.5	26.6	26.8	26.9	27.1	27.9

POST-TEST PROFILE (DISTANCE IN INCHES FROM REFERENCE PLANE**)

Axle Height	11.5	X	X	23.6	32.9	36.3	37.6	37.1	36.9	35.9	34.1	32.0	29.4	26.8	X	X
H-Point	20.0	X	22.3	22.8	***	***	***	***	***	***	***	34.6	31.9	28.2	25.4	X
Mid Door	24.3	20.9	22.6	22.8	***	***	***	***	***	***	***	34.8	30.2	27.1	24.5	21.4
Window Sill	34.9	22.3	22.4	22.5	***	***	***	***	***	***	***	34.0	31.9	28.1	24.8	22.8
Window Top	54.5	X	X	X	X	X	30.5	30.3	30.1	30.2	30.3	30.3	29.9	29.6	29.3	29.1

STATIC CRUSH (IN)

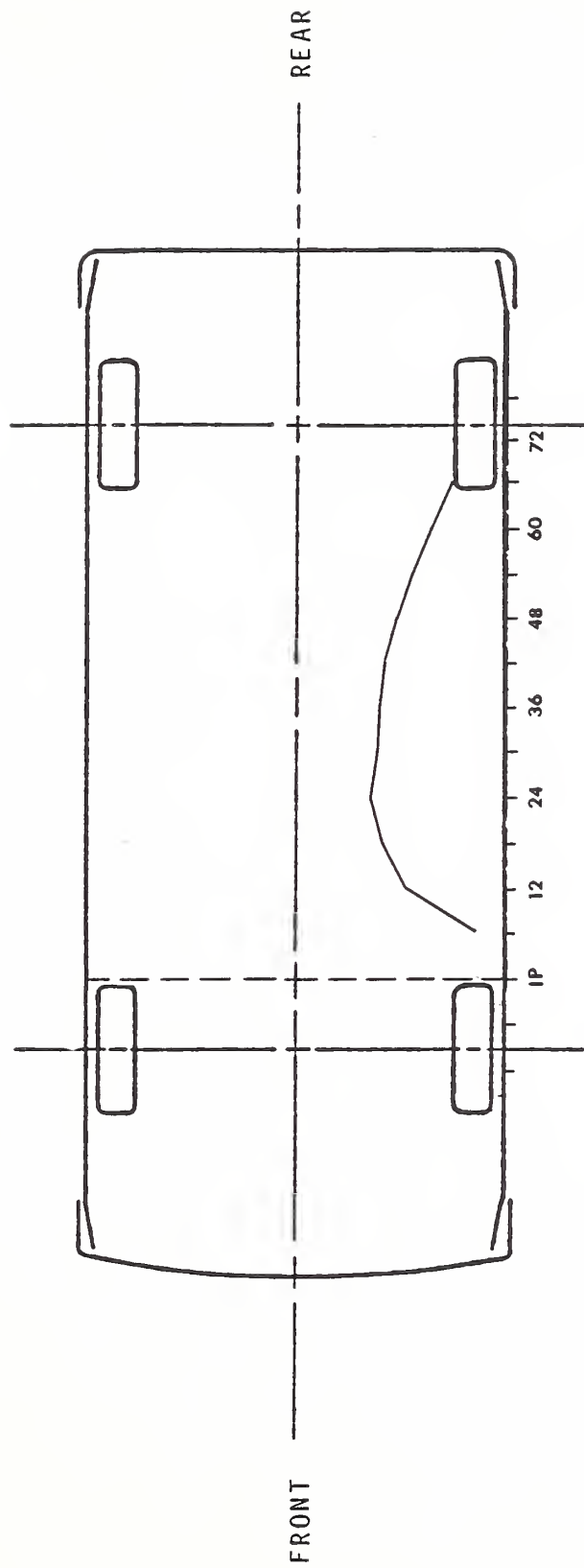
Axle Height	11.5	X	X	3.6	12.8	16.4	17.7	17.1	16.9	15.9	14.0	11.9	9.3	6.7	X	X
H-Point	20.0	X	5.2	4.9	***	***	***	***	***	***	***	16.5	13.8	9.9	7.6	X
Mid Door	24.3	4.3	4.7	5.1	***	***	***	***	***	***	***	17.1	12.4	9.2	6.4	4.8
Window Sill	34.9	2.4	2.8	3.0	***	***	***	***	***	***	***	14.9	12.6	8.8	5.5	3.3
Window Top	54.5	X	X	X	X	X	3.4	3.5	3.3	3.6	3.8	3.7	3.1	2.7	2.2	1.2

* Projected impact point is 37 inches forward of driver's side wheelbase midpoint. Column readings are front to rear from left to right.

** Reference plane is parallel to and 48 inches from the vehicle longitudinal centerline.

***Data point was not available following test.

VEHICLE EXTERIOR STATIC CRUSH PROFILE

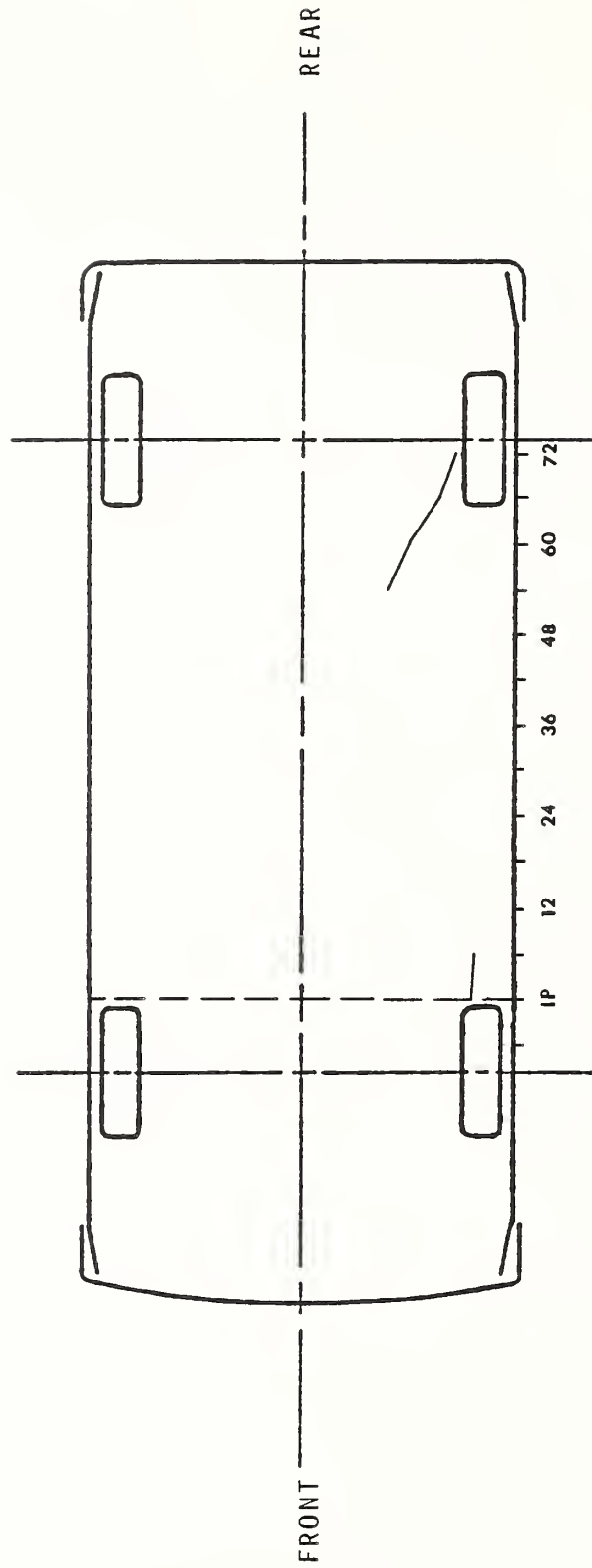


PROFILE LEVEL EQUALS AXLE HEIGHT
IP EQUALS PROJECTED IMPACT POINT

Length of Car = 155.0"
Width of Car = 56.75"

Maximum Crush = 17.7"
Approximate Length of Crush = 60"

VEHICLE EXTERIOR STATIC CRUSH PROFILE

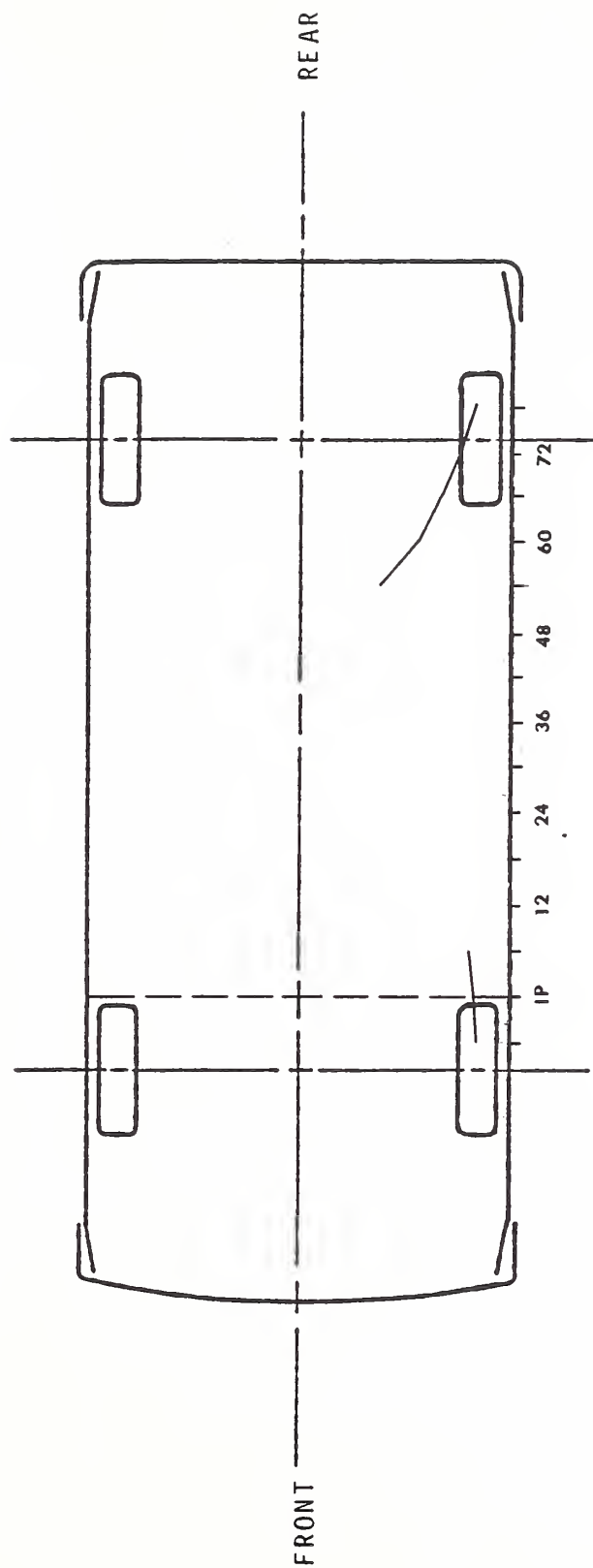


PROFILE LEVEL EQUALS H-POINT HEIGHT
IP EQUALS PROJECTED IMPACT POINT

Length of Car = 155.0"
Width of Car = 56.75"

Maximum Crush = 16.5"
Approximate Length of Crush = 72"

VEHICLE EXTERIOR STATIC CRUSH PROFILE

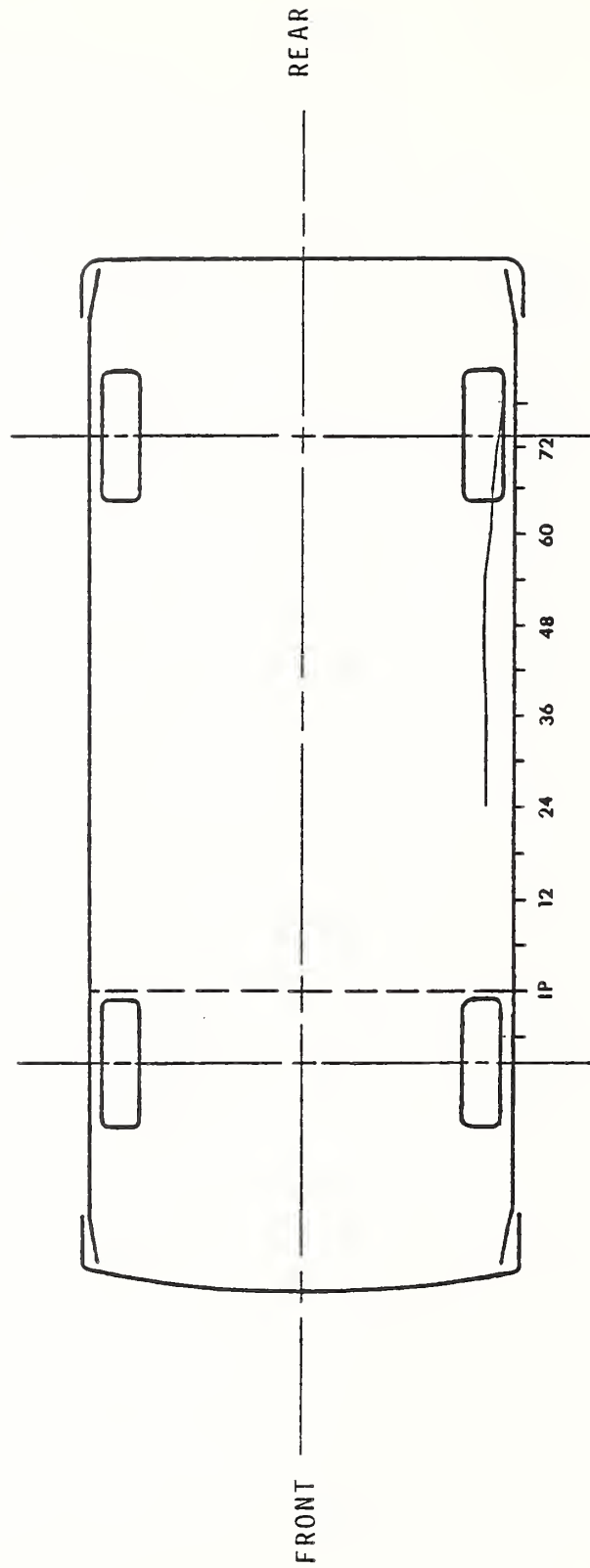


PROFILE LEVEL EQUALS MID-DOOR HEIGHT
IP EQUALS PROJECTED IMPACT POINT

Length of Car = 155.0"
Width of Car = 56.75"

Maximum Crush = 17.1"
Approximate Length of Crush = 84"

VEHICLE EXTERIOR STATIC CRUSH PROFILE

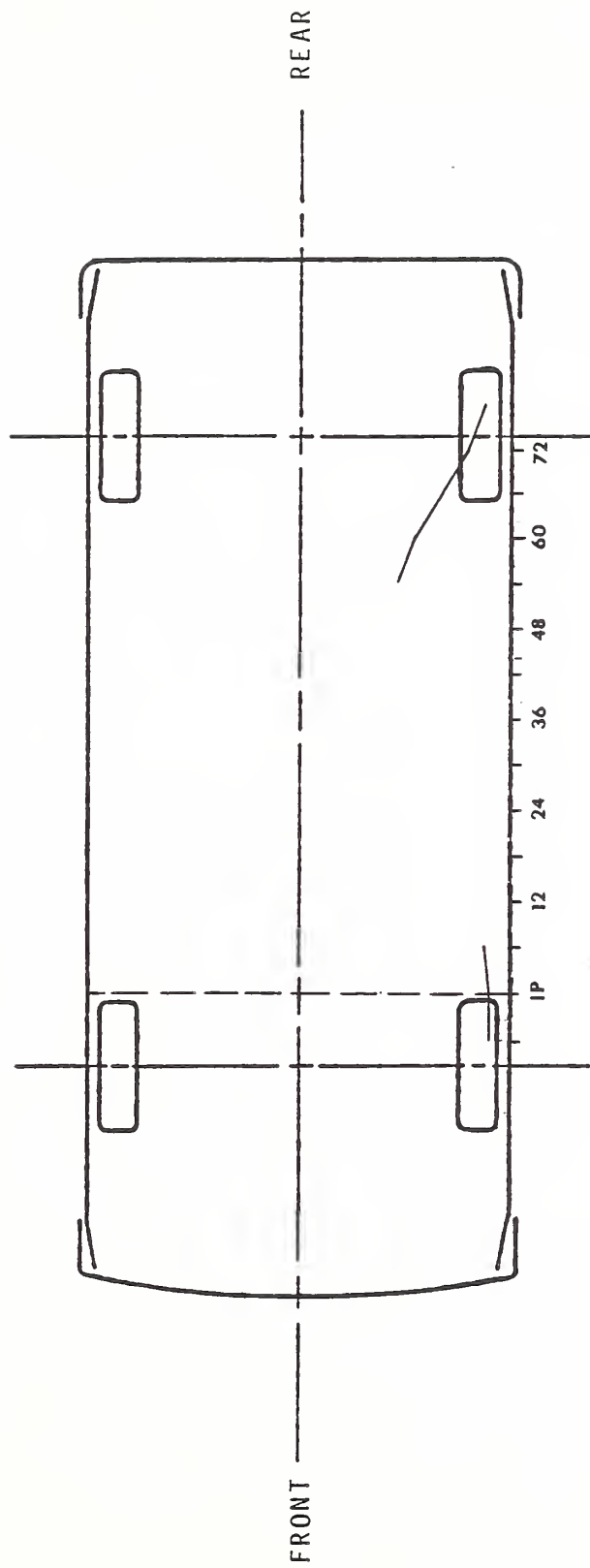


PROFILE LEVEL EQUALS WINDOW TOP HEIGHT
IP EQUALS PROJECTED IMPACT POINT

Length of Car = 155.0"
Width of Car = 56.75"

Maximum Crush = 3.8"
Approximate Length of Crush = 54"

VEHICLE EXTERIOR STATIC CRUSH PROFILE



PROFILE LEVEL EQUALS WINDOW SILL HEIGHT
IP EQUALS PROJECTED IMPACT POINT

Length of Car = 155.0"
Width of Car = 56.75"

Maximum Crush = 14.9"
Approximate Length of Crush = 84"

SIDE IMPACT DUMMY DATA SUMMARY

	DRIVER DUMMY				PASSENGER DUMMY				
	POSITIVE		NEGATIVE		POSITIVE		NEGATIVE		
	DIRECTION*		DIRECTION**		DIRECTION*		DIRECTION**		
	MAX	TIME	MAX	TIME	MAX	TIME	MAX	TIME	
	(g)	(msec)	(g)	(msec)	(g)	(msec)	(g)	(msec)	
HEAD ACCELERATION									
LONGITUDINAL	48.84	179.38	73.32	91.50	44.44	93.63	53.57	71.88	
LATERAL	74.97	61.88	22.42	178.88	116.10	72.13	45.54	94.13	
VERTICAL	34.77	44.00	96.22	73.25	73.52	89.63	74.56	71.75	
RESULTANT		96.70 @ 61.88				146.59 @ 71.75			
HIC	1831.56	from 50.50 to 94.38			1237.13	from 69.63 to 97.13			
CHEST ACCELERATION									
UPPER SPINE									
LONGITUDINAL	38.28	63.13	41.31	68.75	8.61	73.75	66.29	81.88	
LATERAL (P)***	202.26	50.00	51.31	44.38	162.97	80.00	26.03	91.25	
LATERAL (R)***	209.07	50.00	51.04	44.38	164.99	80.00	26.62	91.25	
VERTICAL	37.14	41.87	46.07	56.25	18.98	68.13	22.13	85.63	
RESULTANT (P)		205.54 @ 50.00				172.80 @ 80.00			
RESULTANT (R)		212.23 @ 50.00				174.71 @ 80.00			
DELTA V (MPH)****		34.5 @ 64.38 (P)				22.4 @ 86.25 (P)			
		36.2 @ 64.38 (R)				22.4 @ 86.88 (R)			
LOWER SPINE									
LONGITUDINAL	109.71	56.87	33.27	48.13	57.44	72.50	76.75	78.13	
LATERAL (P)	216.64	48.75	32.03	66.87	140.01	78.13	38.85	95.00	
LATERAL (R)	218.77	48.75	29.59	66.87	150.80	78.75	37.42	95.00	
VERTICAL	38.82	41.87	18.75	56.87	14.03	78.13	8.26	95.00	
RESULTANT (P)		219.79 @ 48.75				160.29 @ 78.13			
RESULTANT (R)		221.88 @ 48.75				169.22 @ 78.13			
DELTA V (MPH)		41.0 @ 63.13 (P)				33.1 @ 85.63 (P)			
		43.6 @ 63.75 (R)				28.4 @ 86.25 (R)			
LEFT UPPER RIB									
LATERAL (P)	241.81	43.75	28.59	38.75	143.43	74.37	8.15	93.13	
LATERAL (R)	240.77	44.38	28.01	38.75	145.06	74.37	10.12	93.13	
DELTA V (MPH)		36.5 @ 86.88 (P)				33.6 @ 131.25 (P)			
		36.9 @ 86.25 (R)				33.8 @ 131.88 (R)			
LEFT LOWER RIB									
LATERAL (P)	263.75	43.13	51.26	47.50	129.99	72.50	32.16	93.75	
LATERAL (R)	253.39	43.13	45.50	47.50	140.18	72.50	30.23	93.75	
DELTA V (MPH)		39.6 @ 70.63 (P)				31.4 @ 122.50 (P)			
		37.4 @ 66.88 (R)				32.5 @ 123.13 (R)			
PELVIS ACCELERATION									
LONGITUDINAL	---	---	°	---	°	26.11	60.38	67.34	69.88
LATERAL	---	---	°	---	°	102.95	69.00	29.17	46.50
VERTICAL	---	---	°	---	°	32.57	75.75	17.93	78.13
RESULTANT		---	@	---	°		122.15 @ 69.38		
DELTA V (MPH)		---	@	---	°		34.1 @ 97.25		

SIDE IMPACT DUMMY DATA SUMMARY CONTD

		<u>DRIVER DUMMY</u>				<u>PASSENGER DUMMY</u>			
		<u>POSITIVE</u>		<u>NEGATIVE</u>		<u>POSITIVE</u>		<u>NEGATIVE</u>	
		<u>DIRECTION*</u>		<u>DIRECTION**</u>		<u>DIRECTION*</u>		<u>DIRECTION**</u>	
		<u>MAX</u>	<u>TIME</u>	<u>MAX</u>	<u>TIME</u>	<u>MAX</u>	<u>TIME</u>	<u>MAX</u>	<u>TIME</u>
		<u>(in)</u>	<u>(msec)</u>	<u>(in)</u>	<u>(msec)</u>	<u>(in)</u>	<u>(msec)</u>	<u>(in)</u>	<u>(msec)</u>
RIB DEFLECTION	†	1.92	102.13	---	--- ^ε	---	--- ^γ	---	--- ^γ

* LONGITUDINAL: FORWARD
 LATERAL: RIGHTWARD
 VERTICAL: UPWARD

**LONGITUDINAL: REARWARD
 LATERAL: LEFTWARD
 VERTICAL: DOWNWARD

*** (P) = Primary Sensor, (R) = Redundant Sensor

**** For dummy channels, Delta V is the velocity change at the approximate time of separation from the contact area.

† Compression: Positive

° The CTM has judged that intermittent rattling has occurred in these channels and, therefore, the peak values reported are questionable as are applicable resultants and Delta V's.

γ See TEST ANOMALIES

ε There were no negative values in the time interval of interest.

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

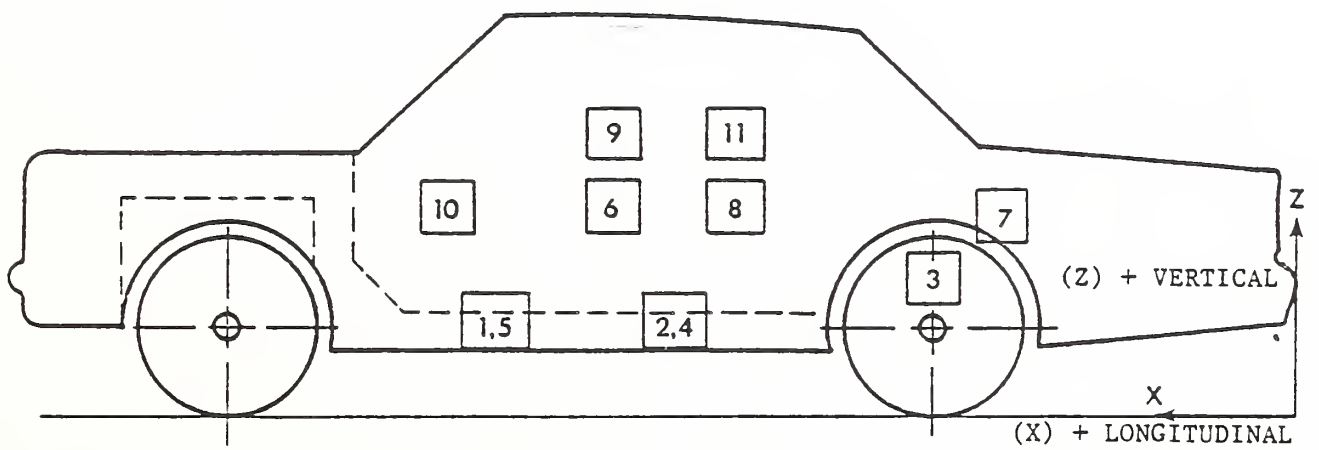
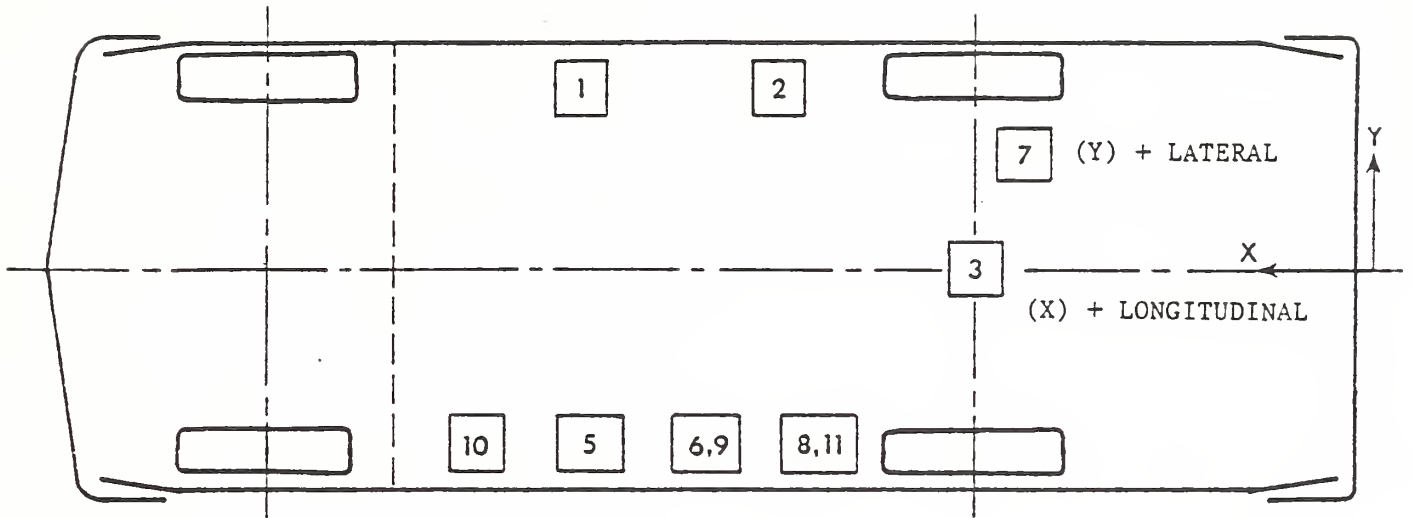
NO.	LOCATION	X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
					MAX (g)	TIME (msec)	MAX (g)	TIME (msec)
1	RIGHT SILL AT FRONT SEAT	83.5	23.5	10.1				
	(LONGITUDINAL)	$\Delta V = -7.8$ mph @ 123.00 msec			2.20	121.25	8.43	83.00
	(LATERAL)	$\Delta V = 14.6$ mph @ 123.00 msec			18.73	50.25	3.78	113.88
	(VERTICAL)				8.98	75.13	7.72	39.63
	(RESULTANT)				19.61 @ 50.13			
2	RIGHT SILL AT REAR SEAT	62.0	23.5	10.3				
	(LONGITUDINAL)	$\Delta V = -5.3$ mph @ 123.00 msec			3.84	120.38	7.54	83.25
	(LATERAL)	$\Delta V = 21.1$ mph @ 123.00 msec			23.81	72.13	3.54	155.13
	(VERTICAL)				7.91	52.50	6.67	40.00
	(RESULTANT)				24.45 @ 72.00			
3	REAR DECK OVER AXLE	32.0	0.0	6.1				
	(LONGITUDINAL)	$\Delta V = -8.3$ mph @ 123.00 msec			12.92	87.63	32.25	78.75
	(LATERAL)	$\Delta V = 28.9$ mph @ 123.00 msec			48.62	75.63	4.11	124.38
	(VERTICAL)				18.06	83.13	10.95	75.50
	(RESULTANT)				56.85 @ 76.88			
4	LEFT SILL AT REAR SEAT	62.3	-23.5	8.0				
	(LATERAL)	$\Delta V = 28.0$ mph @ 52.50 msec			104.82	43.88	32.80	59.00
5	LEFT SILL AT FRONT SEAT	84.0	-23.5	9.1				
	(LATERAL)	$\Delta V = \text{---}$ ---Y			---	--- Y	---	--- Y
6	LEFT FRONT DOOR CENTERLINE	82.1	-26.1	22.2				
	(LATERAL)	$\Delta V = 32.1$ mph @ 41.00 msec			154.60	24.38	108.98	48.75
7	RIGHT REAR COMPARTMENT	31.0	15.5	13.8				
	(LONGITUDINAL)				6.21	119.38	14.53	74.13
8	MIDREAR OF LEFT FRONT DOOR	61.6	-26.0	22.2				
	(LATERAL)	$\Delta V = 34.3$ mph @ 45.74 msec			150.27	41.38	68.76	63.13
9	UPPER LEFT FRONT DOOR CENTERLINE	82.8	-26.1	31.3				
	(LATERAL)	$\Delta V = 30.6$ mph @ 41.38 msec			129.57	30.50	166.92	48.25
10	MIDFRONT OF LEFT FRONT DOOR	100.6	-25.9	21.1				
	(LATERAL)	$\Delta V = 23.4$ mph @ 24.63 msec			133.25	12.50	103.90	29.63
11	UPPER REAR OF LEFT REAR DOOR	71.9	-25.8	31.2				
	(LATERAL)	$\Delta V = \text{---}$ ---Y			---	--- Y	---	--- Y

* Reference: X - Rear Bumper (+ Forward), Y - Vehicle Centerline (+ To Right),
Z - Ground Level (+ Up)

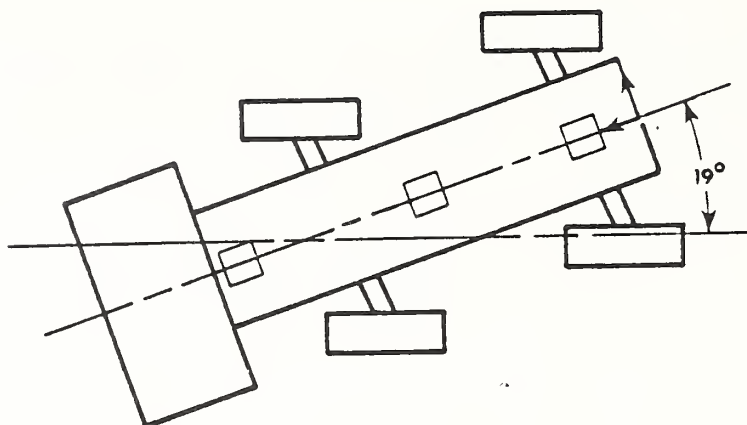
All measurements of accelerometer locations in inches.

Y See TEST ANOMALIES

VEHICLE ACCELEROMETER LOCATIONS



MOVING BARRIER ACCELEROMETER LOCATIONS AND DATA SUMMARY



NO.	LOCATION	X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
					MAX (g)	TIME (msec)	MAX (g)	TIME (msec)
1	CENTER OF GRAVITY	74.5	0.0	11.5				
	(LONGITUDINAL)	$\Delta V = -19.0 \text{ mph @ } 123.00 \text{ msec}$			---	---	16.13	55.88
	(LATERAL)	$\Delta V = -3.0 \text{ mph @ } 123.00 \text{ msec}$			1.84	24.25	5.09	83.25
	(VERTICAL)				11.98	60.50	12.78	53.75
	(RESULTANT)					19.40 @	54.25	
2	FRONT FRAME MEMBER	130.3	0.0	11.3				
	(LONGITUDINAL)	$\Delta V = -19.4 \text{ mph @ } 123.00 \text{ msec}$			---	---	16.20	55.63
3	REAR FRAME MEMBER	23.3	0.0	11.5				
	(LONGITUDINAL)	$\Delta V = -16.4 \text{ mph @ } 123.00 \text{ msec}$			1.29	117.63	15.25	55.13

* Reference: X - Rear Most Point of Frame (+ To Forward), Y - Barrier Centerline (+ To Right), Z - Ground Level (+ To Up)

All measurements of accelerometer locations in inches.

*There were no positive values in the time interval of interest.

HIGH SPEED CAMERA INFORMATION

CAMERA NO.	LOCATION	TYPE	LENS (mm)	SPEED (fps)	PURPOSE OF CAMERA DATA
1	Overhead	Photosonic 1B	8	448	Vehicle Dynamics
2	Overhead	Photosonic 1B	25	477	Close-up of impact point
3	Onboard MDB	Photosonic 1B	25	505	Closeup of impact point
4	Onboard MDB	Photosonic 1B	13	500	Driver kinematics
5	Ground level - right	Photosonic 1B	25	500	Overall view
6	Ground level - left	Photosonic 1B	17	505	Overall view
7	Onboard vehicle	Photosonic 1B	8	817	Driver kinematics
8	Onboard vehicle	Photosonic 1B	8	807	Driver kinematics
9	Onboard vehicle	Photosonic 1B	8	800	Passenger kinematics

NOTE: CAMERAS ARE NUMBERED ACCORDING TO SPLICING SEQUENCE OF FILM.
 (24 fps) REAL TIME MOVIE FILM COVERAGE OF PRE-CRASH, POST-CRASH
 AND CRASH EVENT SPLICED AT START AND END OF FILM.

LOCATIONS OF OFFBOARD HIGH SPEED CAMERAS

CAMERA NO.	X	Y	Z
1	0	0	25'
2	0	0	25'
5	26'4"	60'	45"
6	-19'7"	-11'3"	45"

Origin of Coordinate System is Point of Impact

+X = Forward with Respect to Striking Vehicle's Velocity Vector
+Y = Rightward with Respect to Striking Vehicle's Velocity Vector
+Z = Upward with Respect to Striking Vehicle's Velocity Vector

NON-GOVERNMENT FURNISHED TRANSDUCER INFORMATION

PARAMETER BEING MEASURED	TYPE OF TRANSDUCER	MODEL NUMBER	SERIAL NUMBER	MFGR.	DATE OF LAST CALIBRATION	SENSITIVITY	DESIRED FULL SCALE (ENGR. UNITS)
BCGXG	Accel	4-202-0001	18845	Bell Howell	11/8/84	0.237 MV/G	50 G
BCGYG	Accel	4-202-0001	18858	Bell Howell	11/8/84	0.238 MV/G	50 G
BCGZG	Accel	4-202-0001	18857	Bell Howell	11/8/84	0.240 MV/G	50 G
BFCXG	Accel	4-202-0001	18240	Bell Howell	11/8/84	0.239 MV/G	50 G
BRCXG	Accel	4-202-0001	19022	Bell Howell	11/8/84	0.220 MV/G	50 G

All dummy and struck vehicle accelerometers were Government Furnished Equipment and were Endevco 2264 Accelerometers.

APPENDIX A
PHOTOGRAPHS

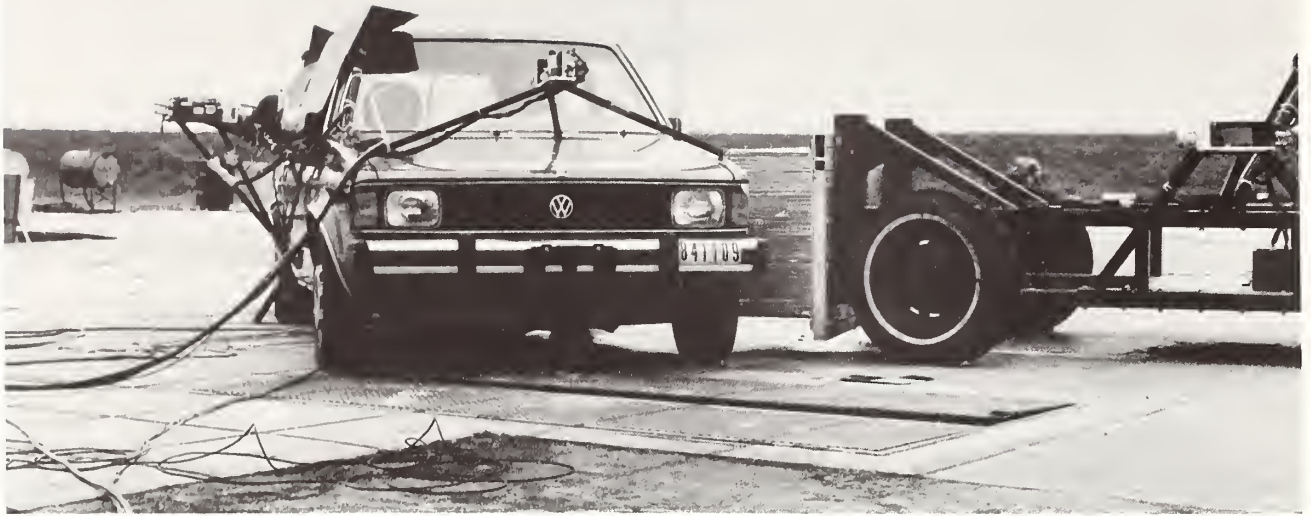


Figure A-1. PRE-TEST OVERALL - VIEW 1



Figure A-2. PRE-TEST OVERALL - VIEW 2
A-2



Figure A-3. PRE-TEST OVERALL - VIEW 3



Figure A-4. PRE-TEST OVERALL - VIEW 4
A-3

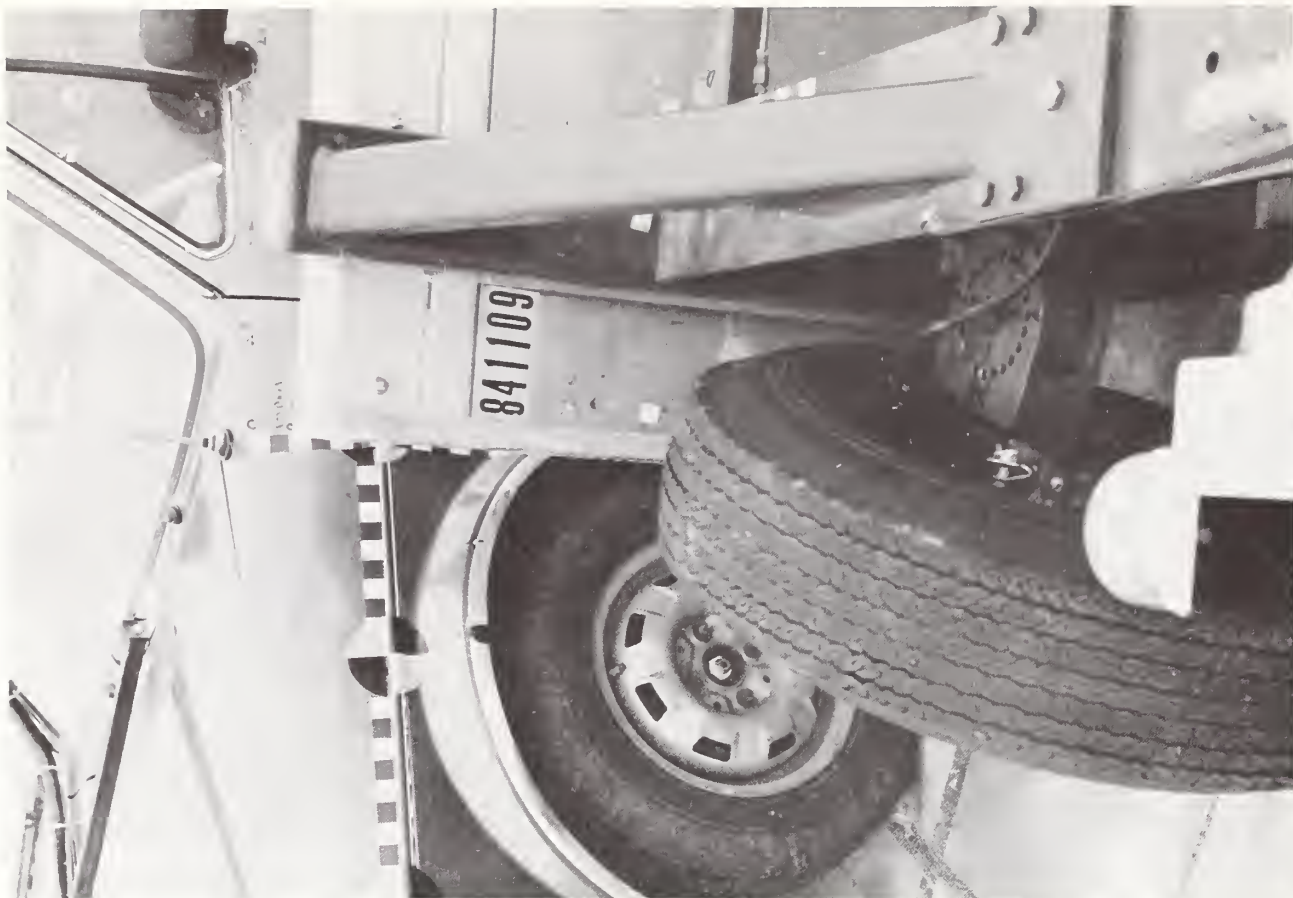


Figure A-5. PRE-TEST CLOSEUP - VIEW 1



Figure A-6. PRE-TEST CLOSEUP - VIEW 2



Figure A-7. PRE-TEST DRIVER DUMMY - VIEW 1

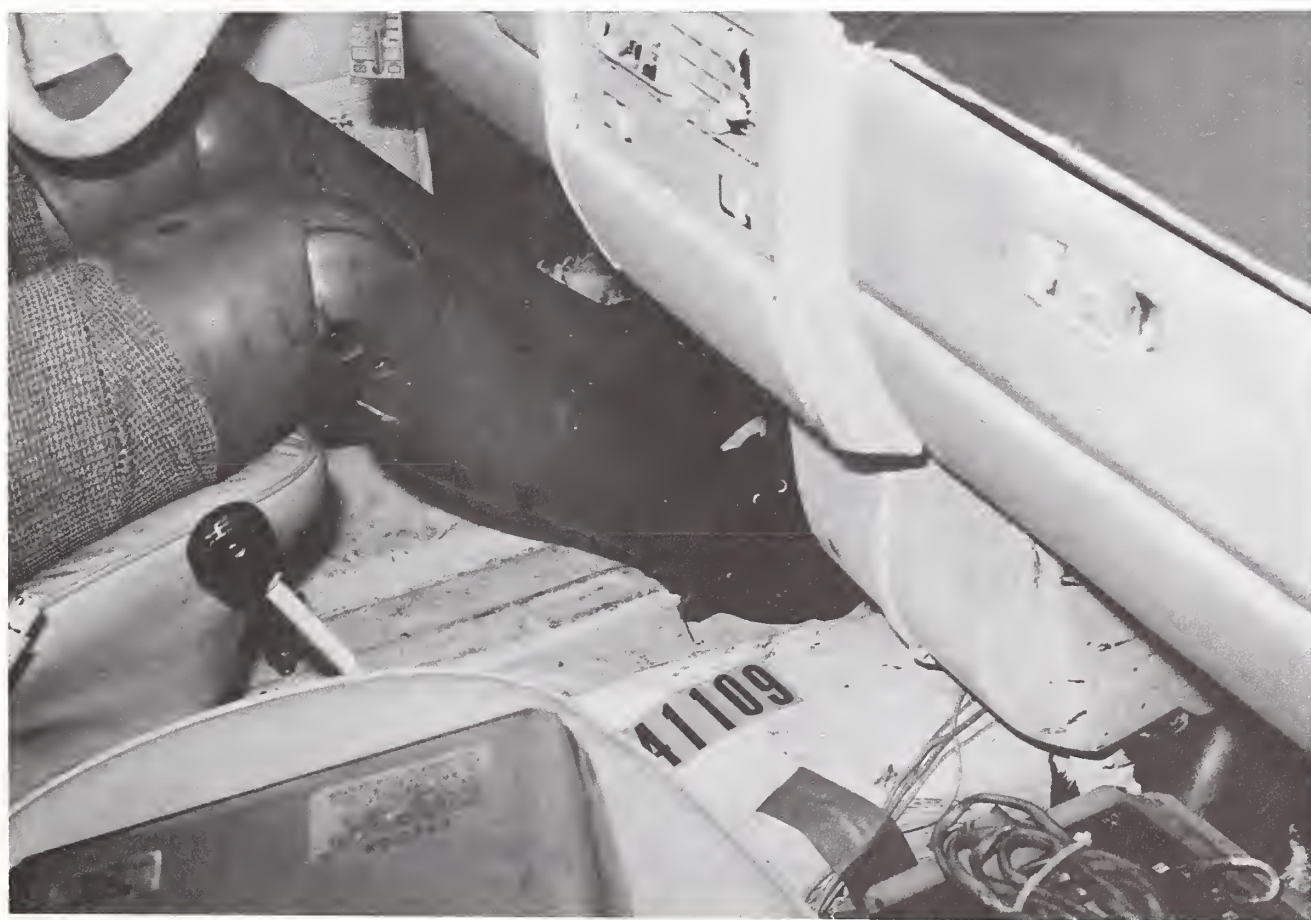


Figure A-8. PRE-TEST DRIVER DUMMY - VIEW 2



Figure A-9. PRE-TEST PASSENGER DUMMY - VIEW 1



Figure A-10. PRE-TEST PASSENGER DUMMY - VIEW 2



Figure A-11. PRE-TEST DUMMIES OVERALL



Figure A-12. CRASH EVENT PHOTOGRAPH
A-7



Figure A-13. POST-TEST OVERALL - VIEW 1



Figure A-14. POST-TEST OVERALL - VIEW 2



Figure A-15. POST-TEST OVERALL - VIEW 3



Figure A-16. POST-TEST OVERALL - VIEW 4
A-9



Figure A-17. POST-TEST DRIVER DUMMY -- VIEW 1



Figure A-18. POST-TEST PASSENGER DUMMY -- VIEW 1
A-10



Figure A-19. POST-TEST PASSENGER DUMMY ~ VIEW 2



Figure A-20. POST-TEST PASSENGER DUMMY - VIEW 3

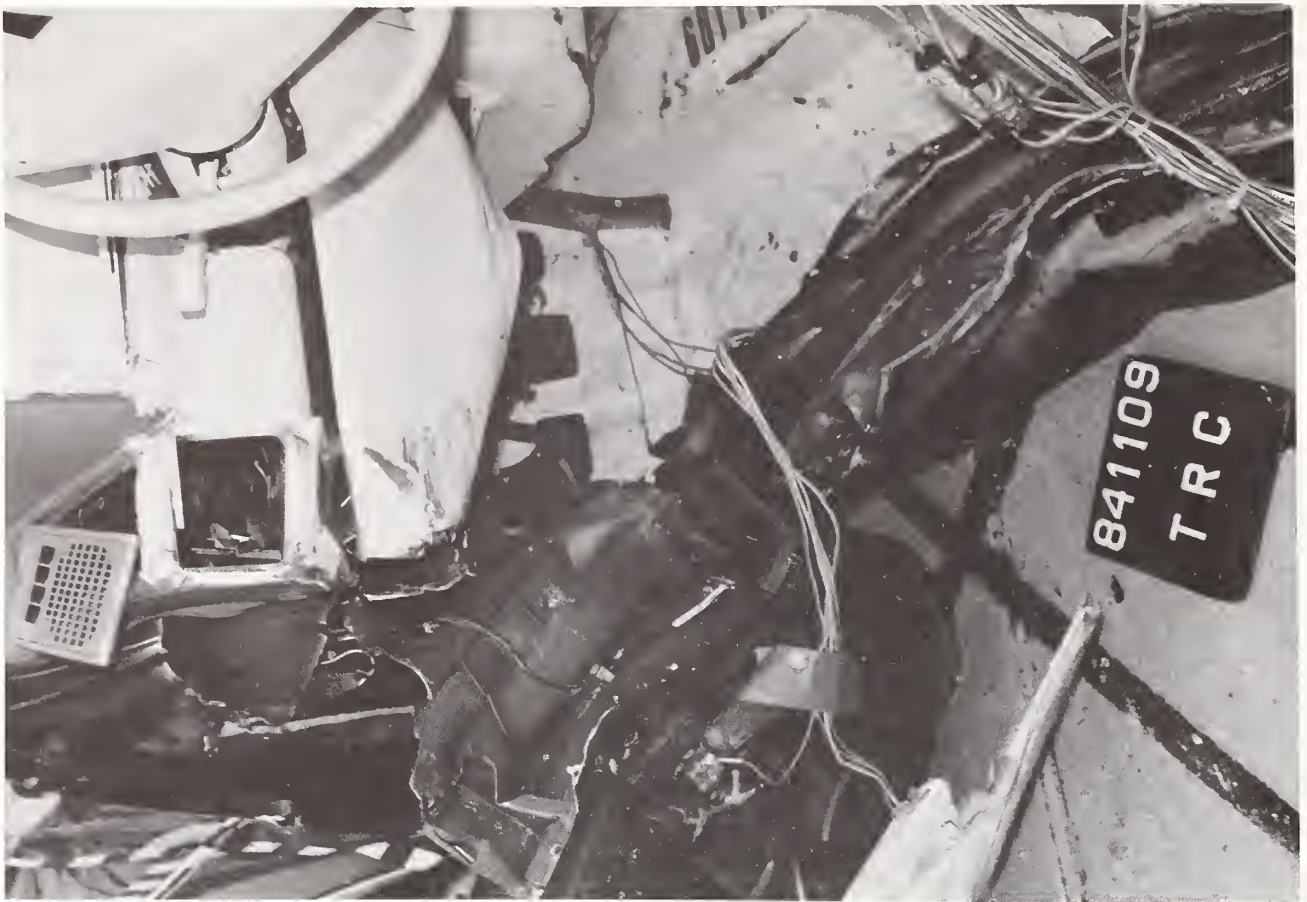


Figure A-21. POST-TEST VEHICLE DAMAGE - VIEW 1



Figure A-22. POST-TEST VEHICLE DAMAGE - VIEW 2

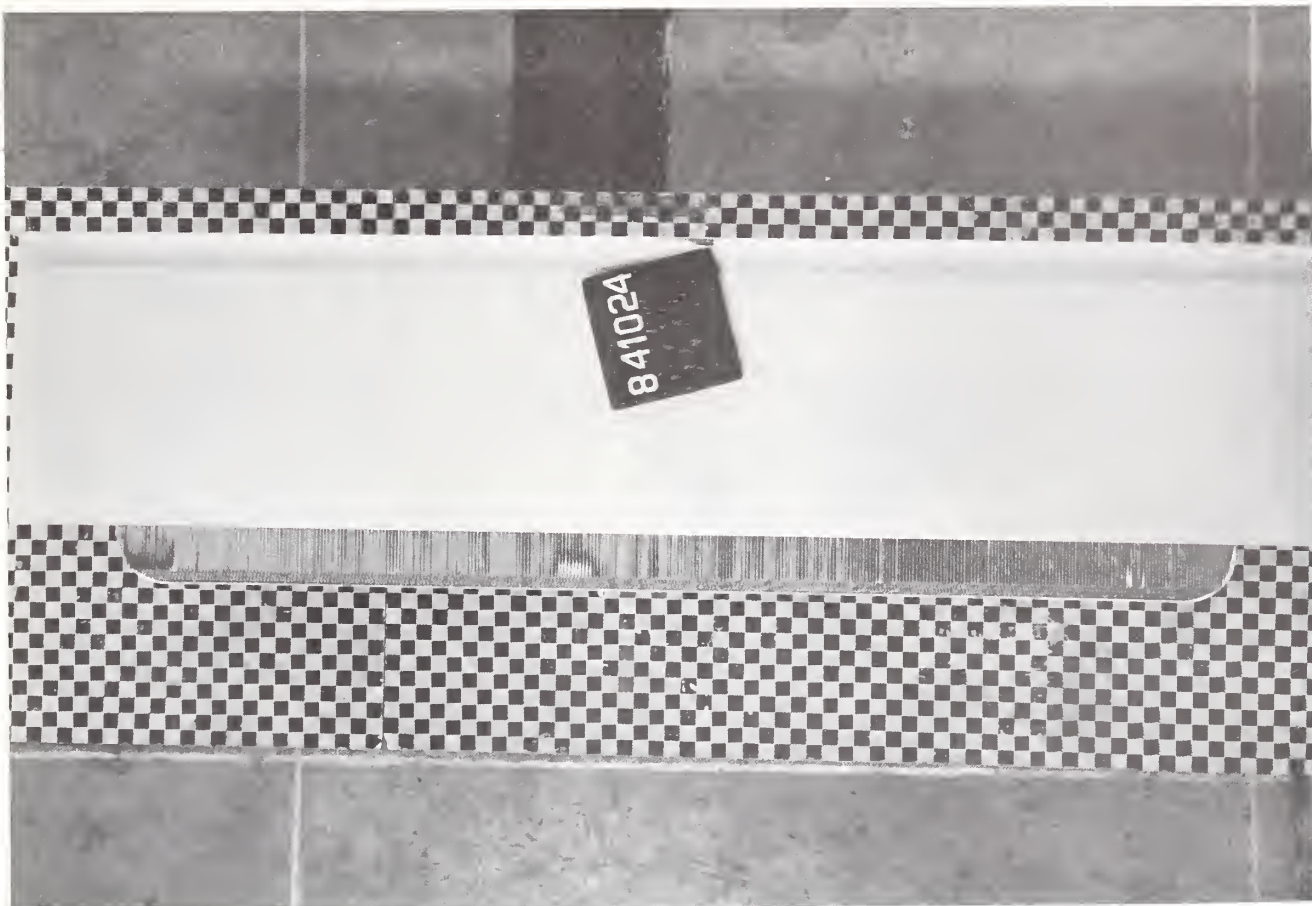


Figure A-23. PRE-TEST MDB FACE -- VIEW 1

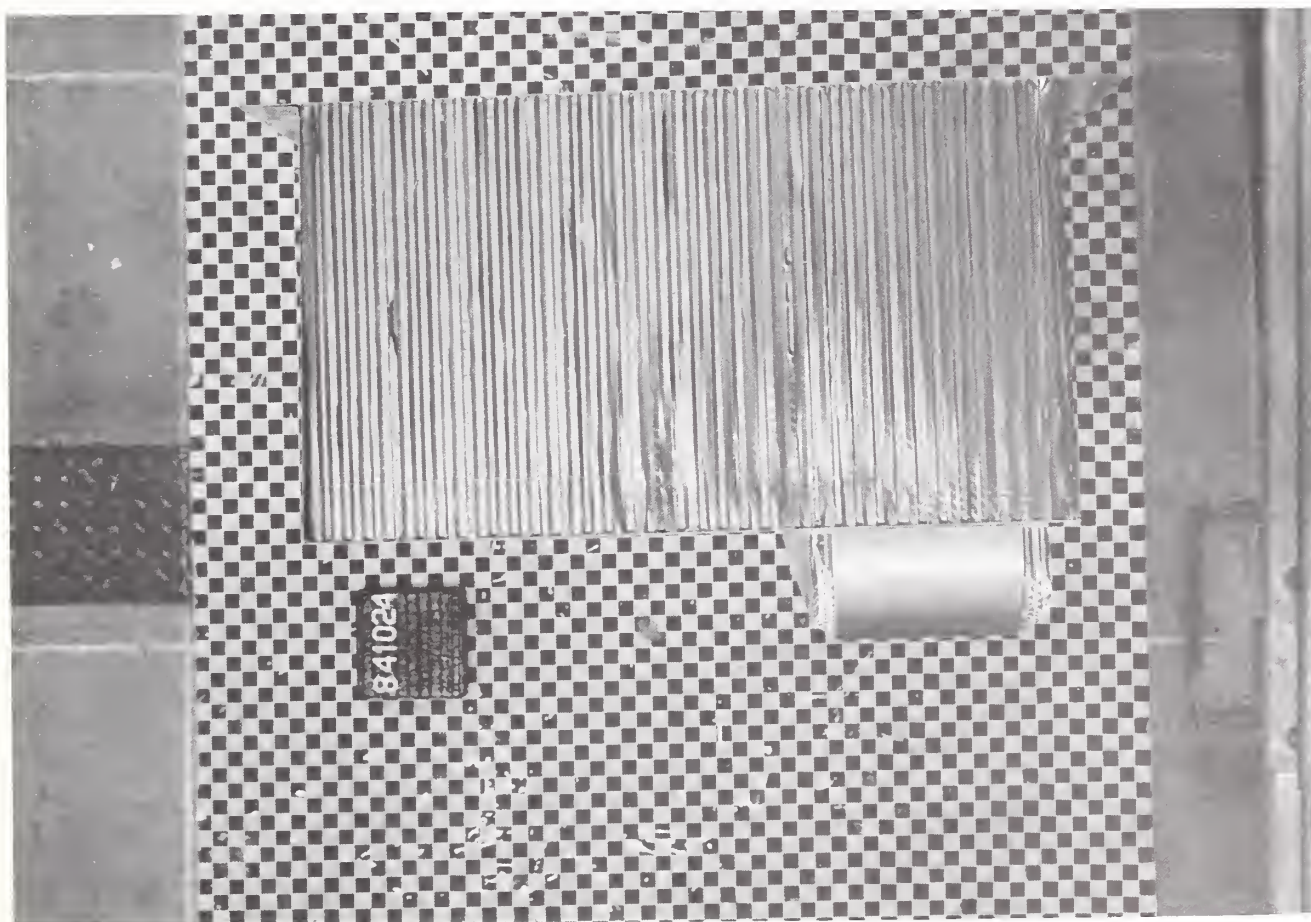


Figure A-24. PRE-TEST MDB FACE -- VIEW 2
A-13



Figure A-25. POST-TEST MDB FACE - VIEW 1

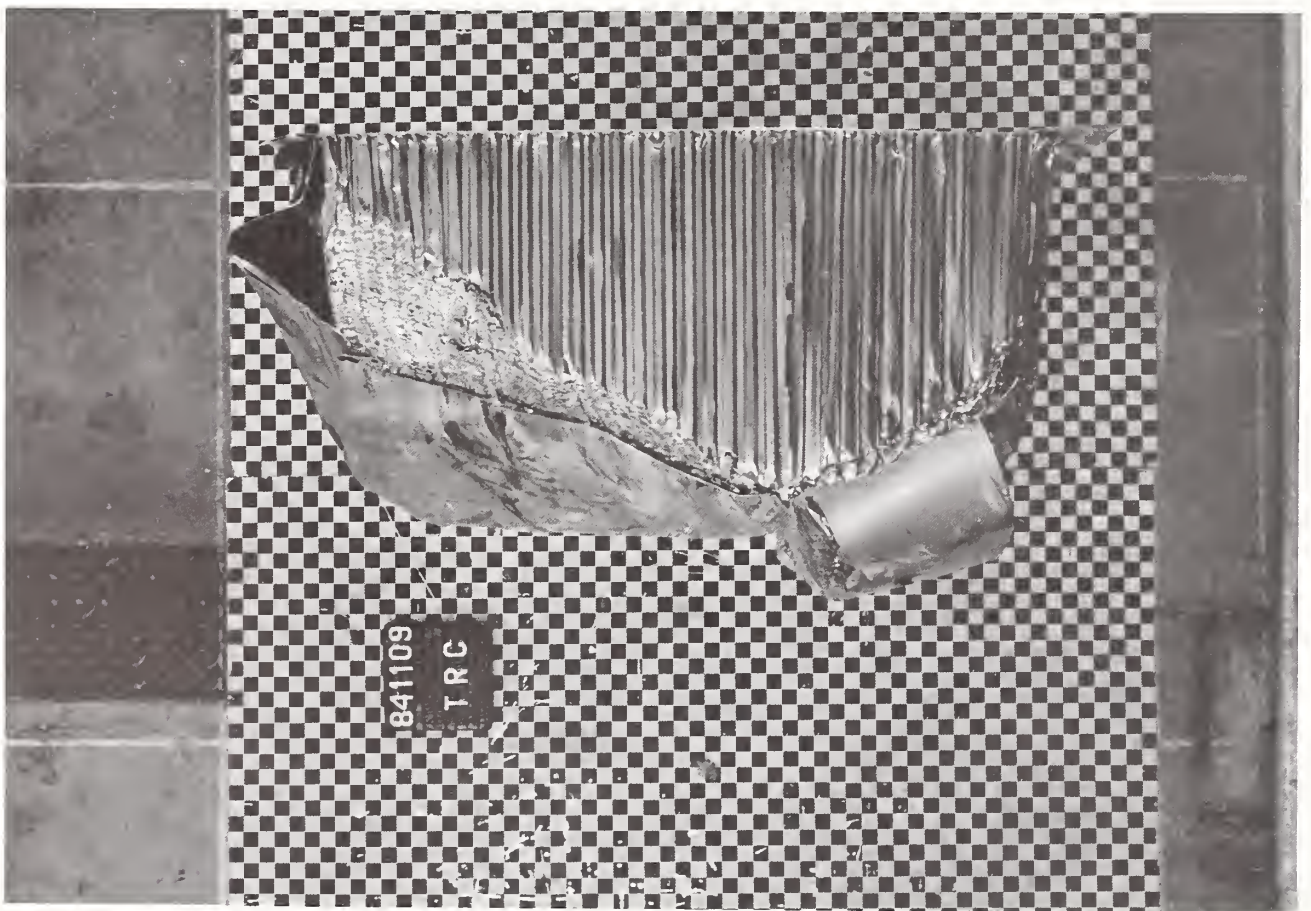


Figure A-26. POST-TEST MDB FACE - VIEW 2
A-14

APPENDIX B
DATA PLOT PRESENTATION

Data plots generated from the crash test data are presented on the following pages. All data are recorded on magnetic tape for inclusion in the NHTSA crash test data base system. The data was filtered according to SAE J211, except dummy thorax data which was filtered using the HSRI filter.

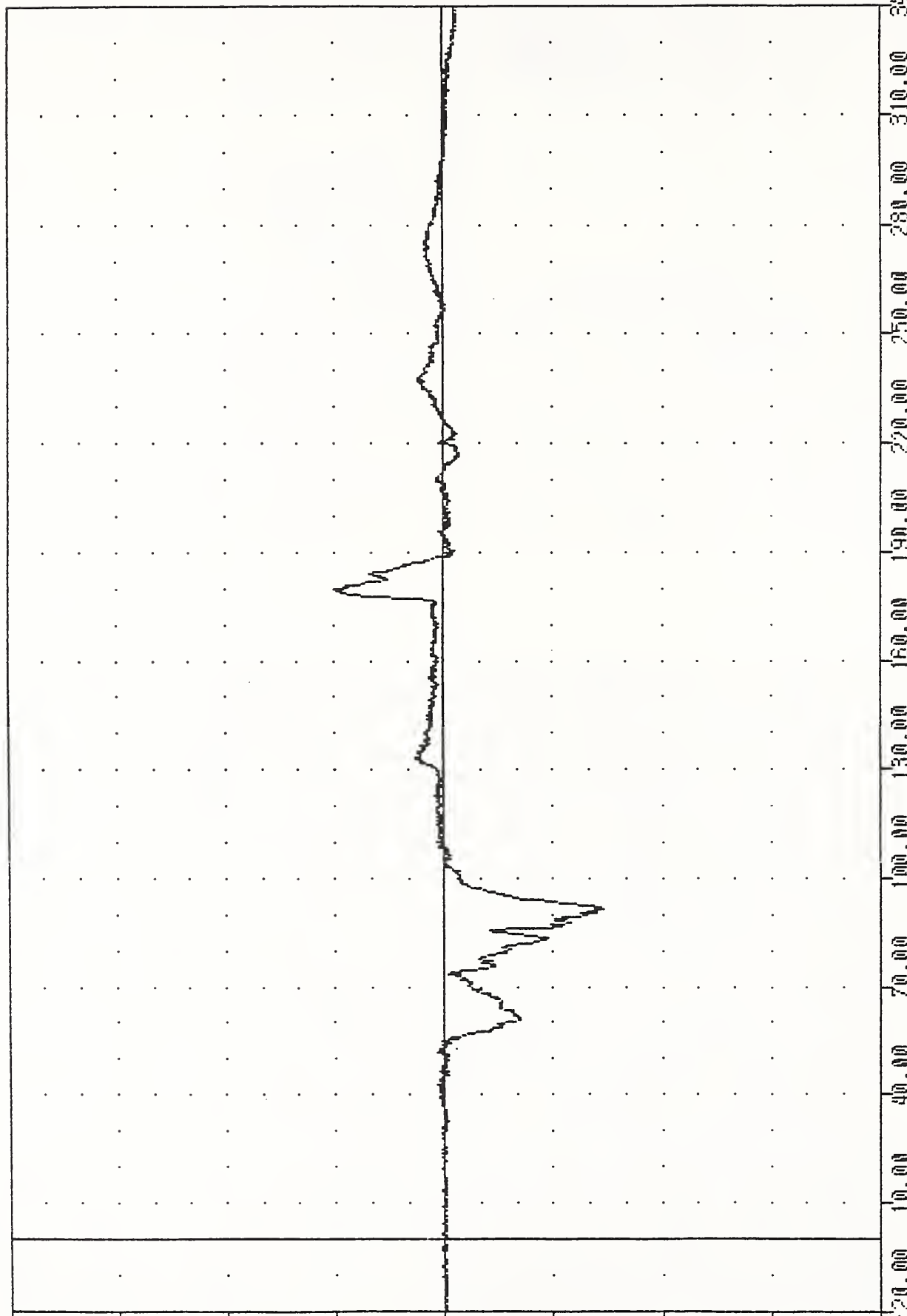
PLU1 DATE 15-NOV-84 15:49:06

TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
HEOX61

FILTER = ALPF 1650/ 5217/ -40

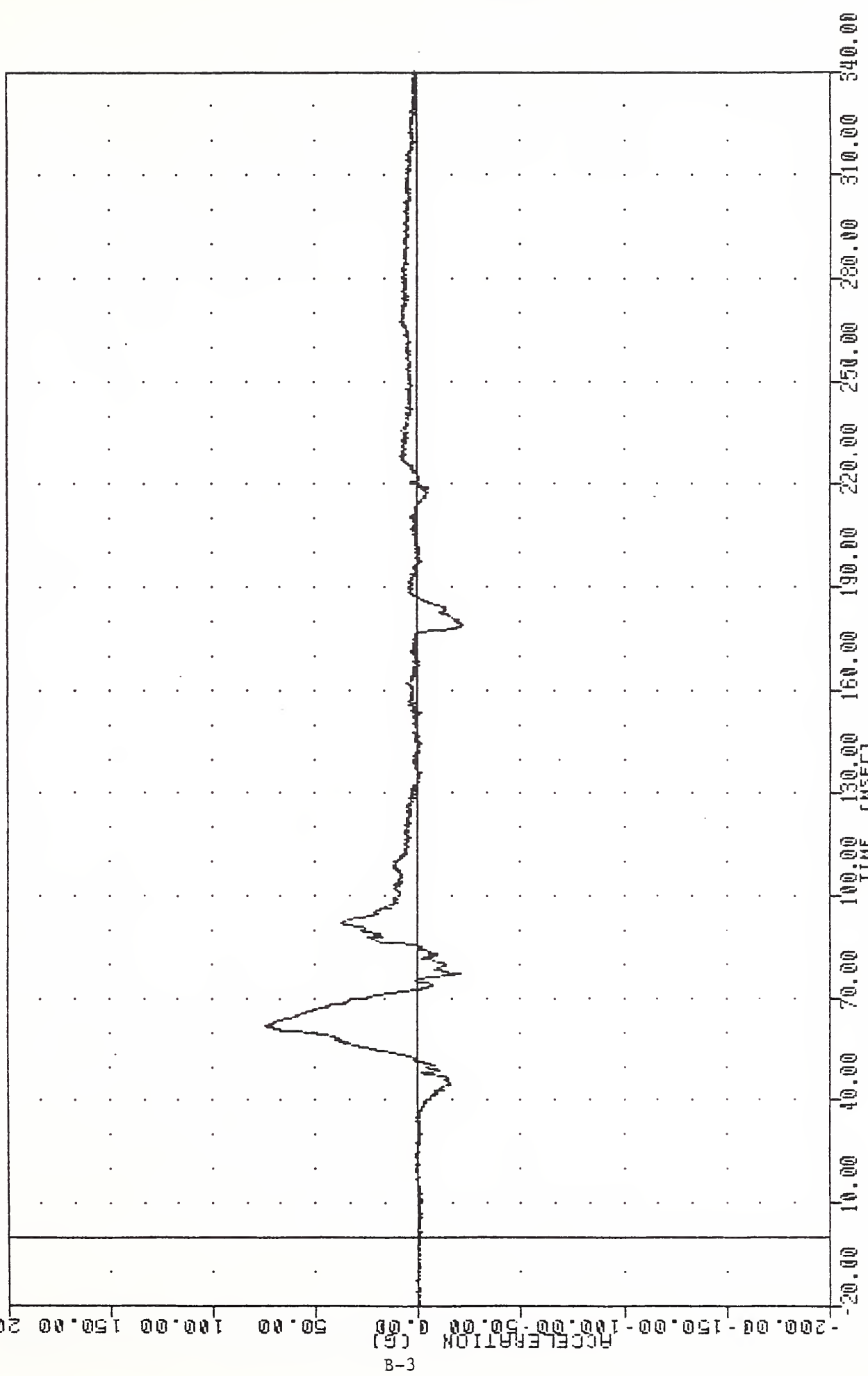
MIN, MAX VALUES = -73.32 91.50, 48.84 179.38

ACCELERATION (G)



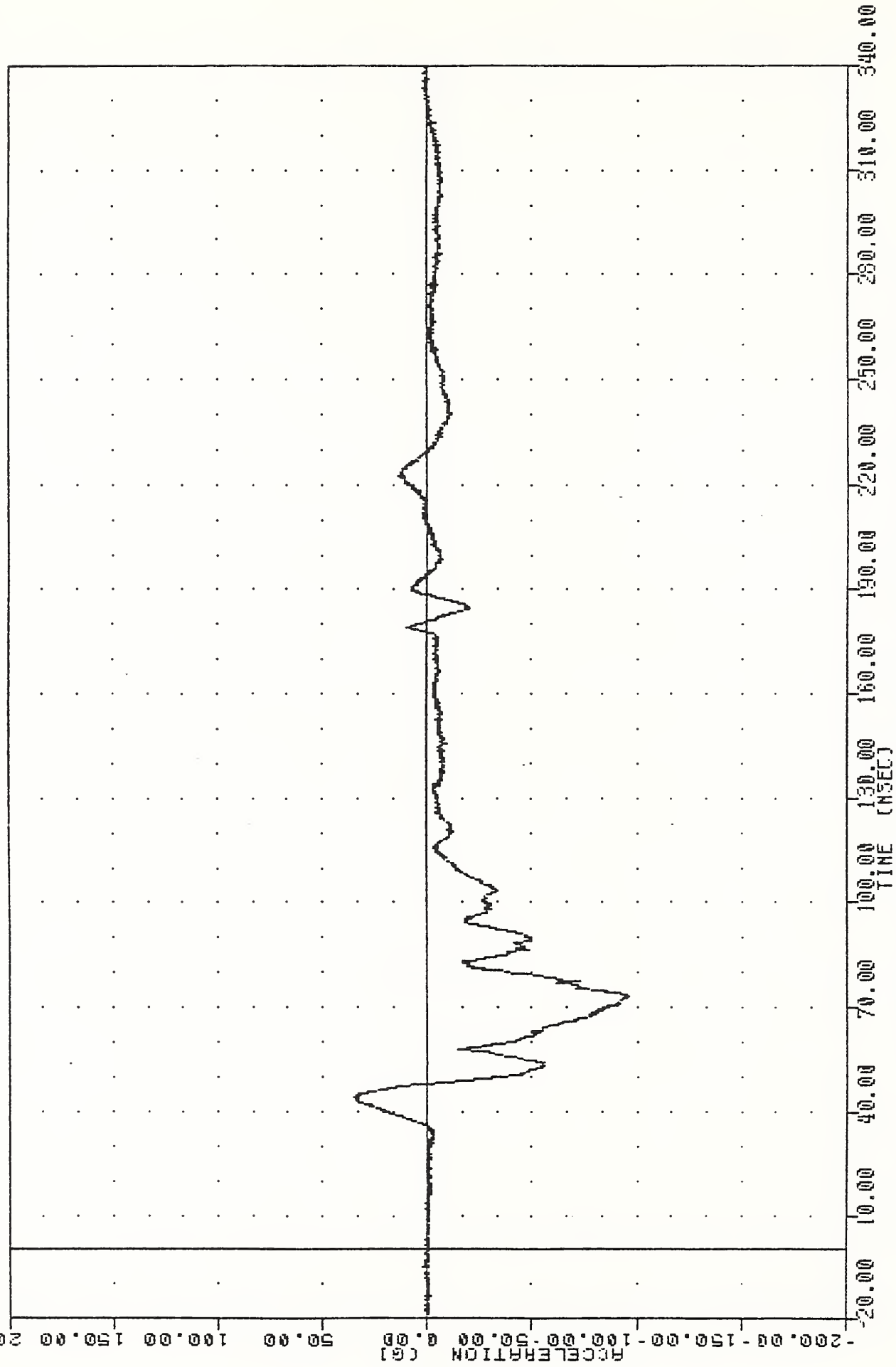
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER HEAD ACCELERATION X AXIS

TRC 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 HEDYG1
 PLOT DATE 15-NOV-84 15:49:06
 FILTER = ALPF 165N/ 5217/ -40
 MIN. MAX VALUES = -22.428 178.88, 74.97 e 61.68



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER HEAD ACCELERATION Y AXIS

TAC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 HEDZ61
 PLOT DATE 15-NOV-84 15:49:06
 FILTER = ALPF 1650/ 5217/ -40
 MIN, MAX VALUES = -96.22 73.25 , 34.77 44.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER HEAD ACCELERATION Z AXIS

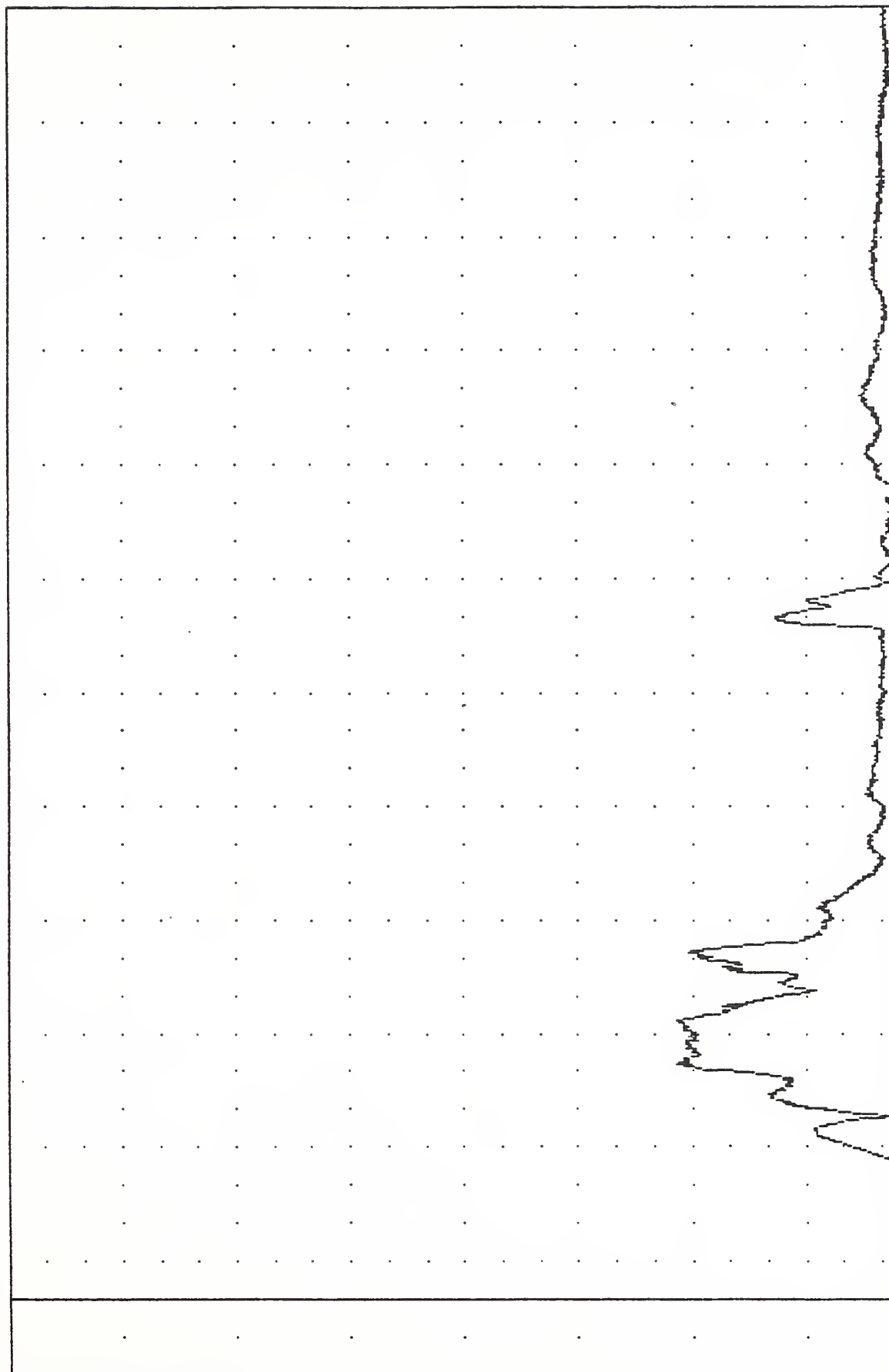
TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
HEDRG1

PLOT DATE 15-NOV-84 15:49:06

FILTER = ALPF 1650/ 5217/ -40

MIN. MAX VALUES = 0.08 24.13, 96.70 61.88

ACCELERATION (G)



-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

TIME (MSEC)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER HEAD RESULTANT

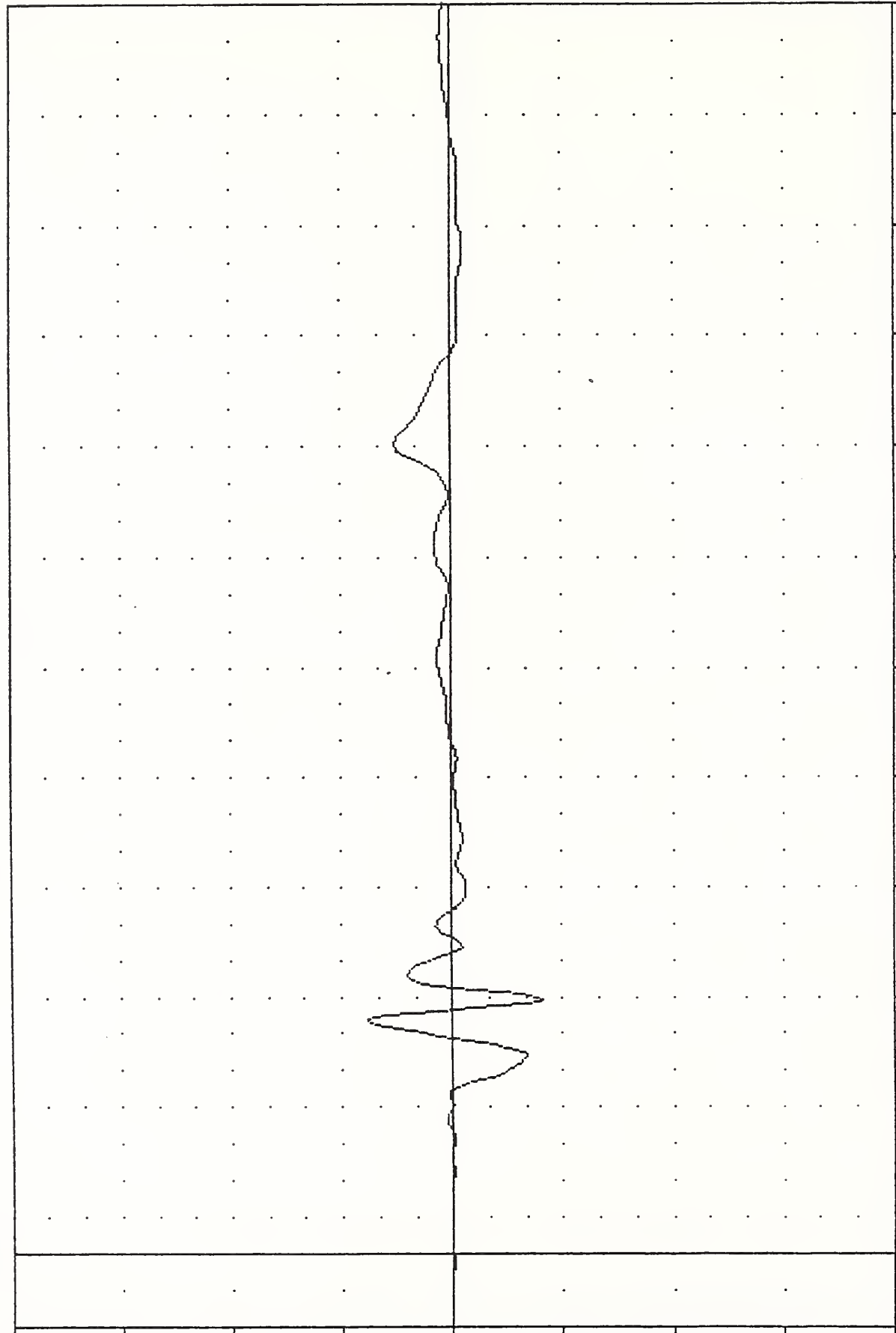
TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T01XG1

PLU1 DATE 15-MAY-84 10:49:47

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -41.31e 68.75, 38.28 e 63.13

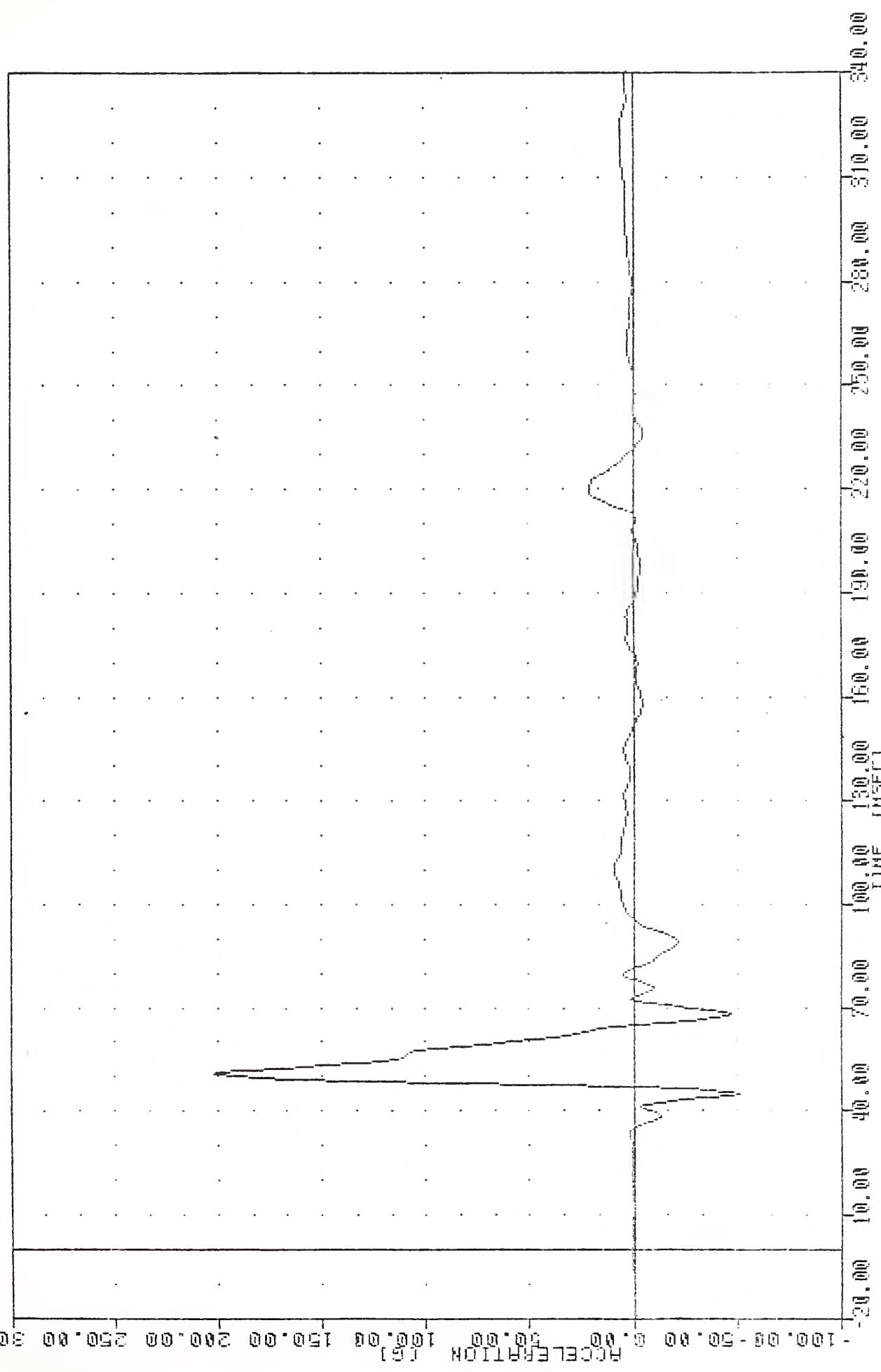
ACCELERATION (G)



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER UPPER SPINE ACCELERATION X AXIS

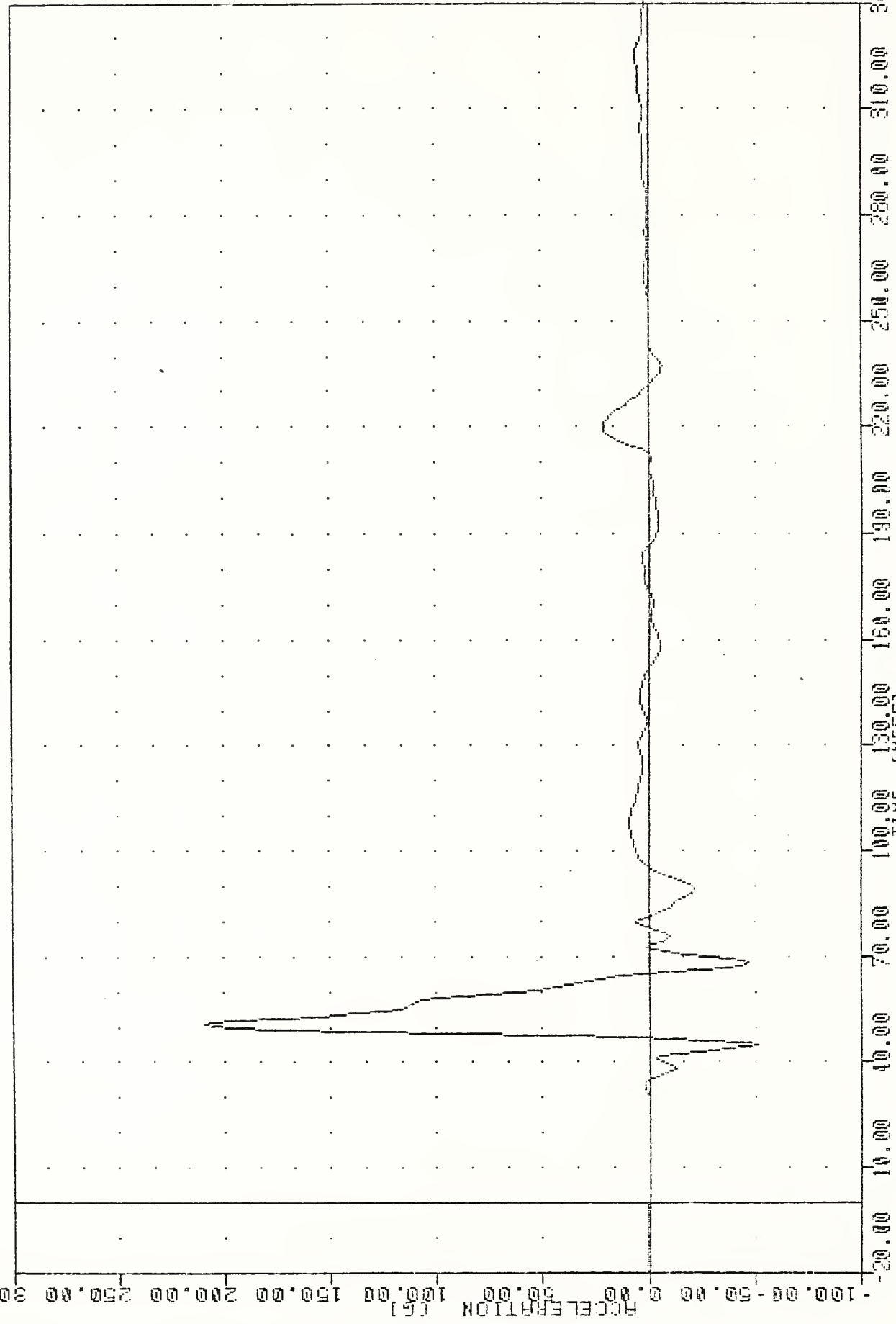
TRC , 041109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T01Y61

PLU1 DATE 19-NOV-84 14:24:09
 FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = -51.318 44.38 , 202.28 & 50.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER UPPER SPINE ACCELERATION Y AXIS

TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 TQ1YGA
 FLOT DATE 19-NOV-84 14:24:00
 FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -51.048 44.36 , 209.07 2 50.00



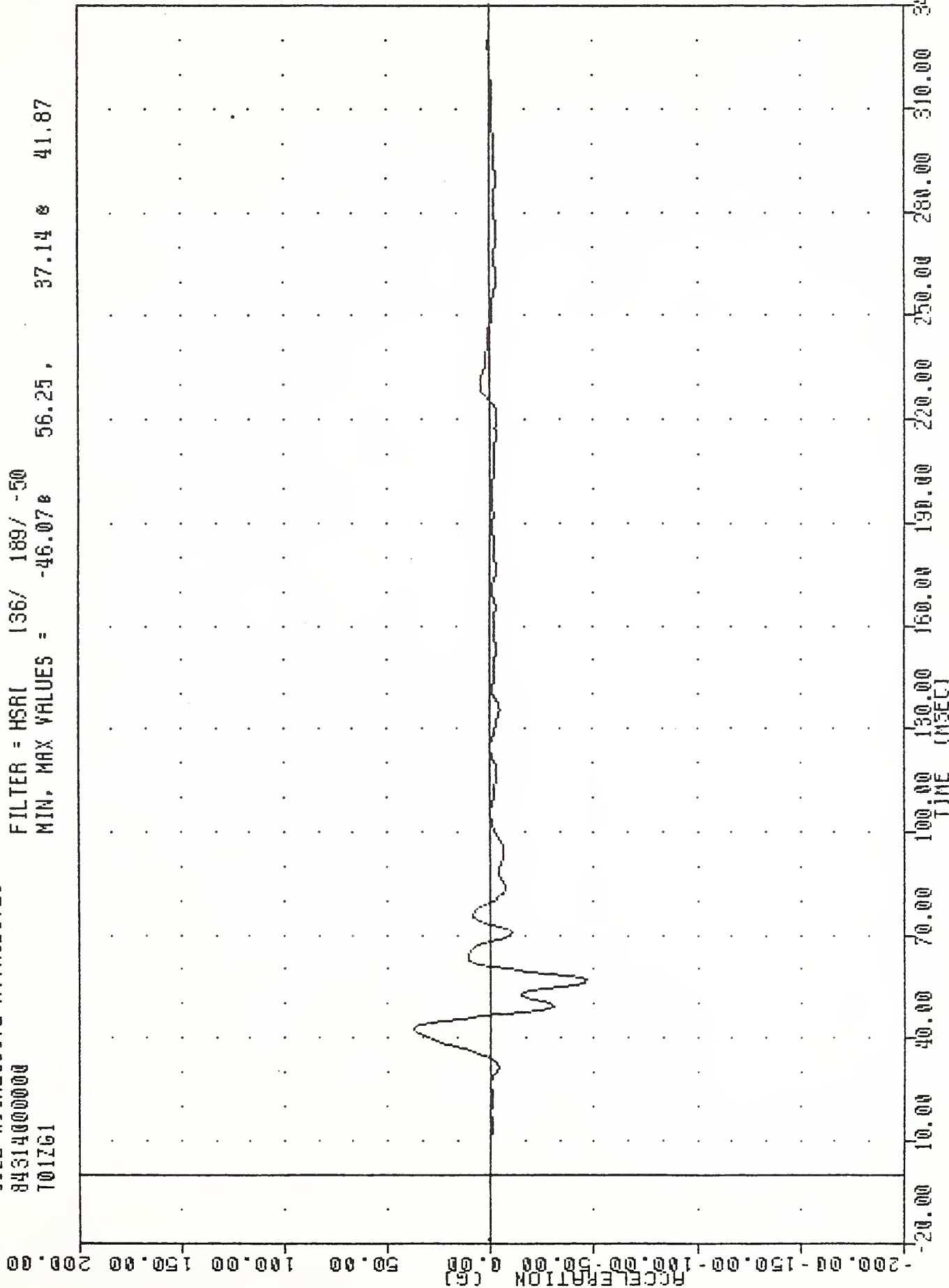
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER UPPER SPINE ACCELERATION #2 Y AXIS

TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 701261

PLUI DATE 15-NOV-84 15:49:47

FILTER = HSRI 136/ 189/ -50

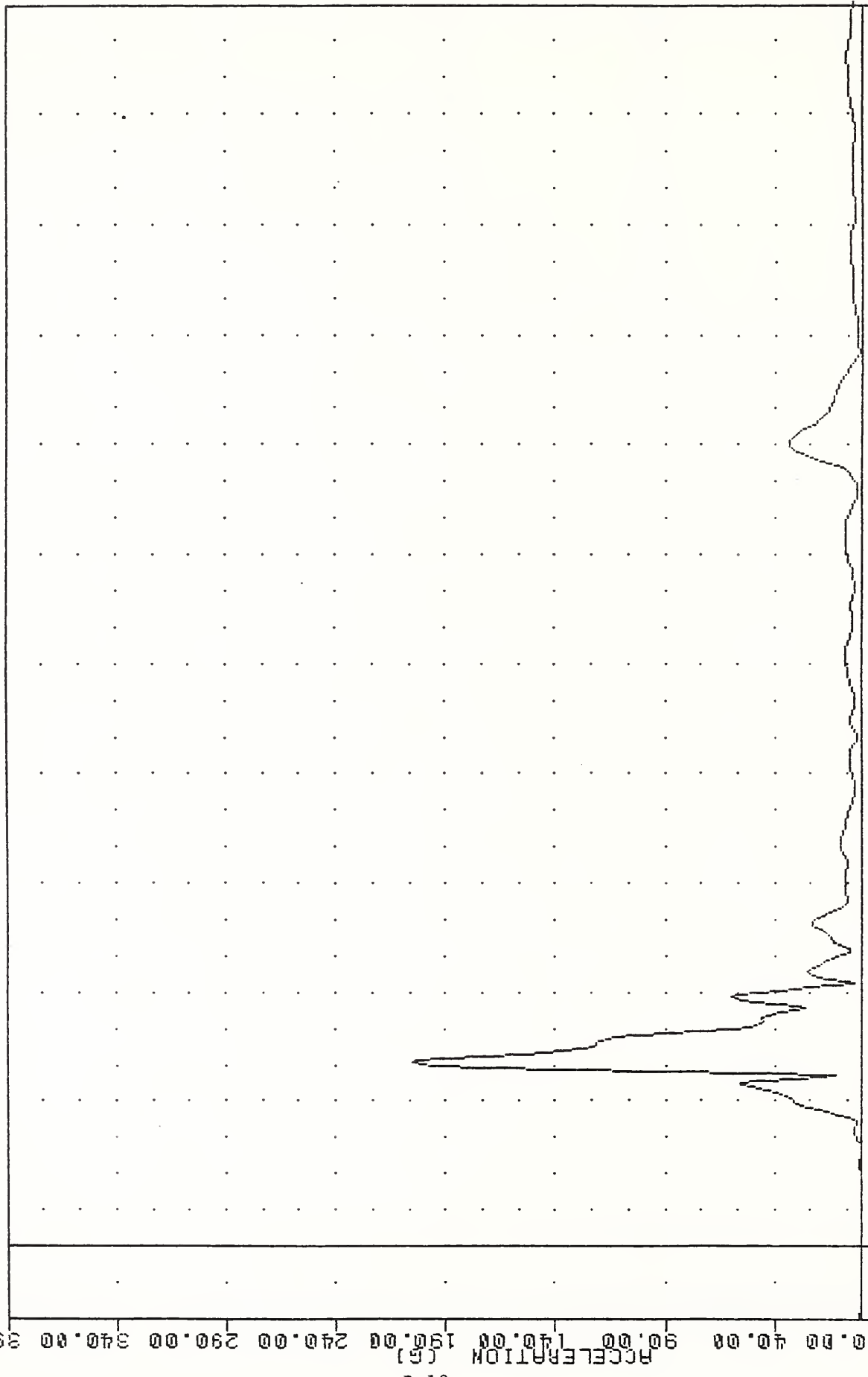
MIN, MAX VALUES = -46.07e 56.25, 37.14 e 41.87



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER UPPER SPINE ACCELERATION Z AXIS

TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
T01RG1

PL01 DATE 15-NOV-84 15:49:47
FILTER = HSRI 136/ 189/ -50
MIN, MAX VALUES = 0.098 -7.50, 205.54 @ 50.00



-20.00 10.00 30.00 40.00 50.00 60.00 70.00 80.00 90.00 100.00 110.00 120.00 130.00 140.00 150.00 160.00 170.00 180.00 190.00 200.00 210.00 220.00 230.00 240.00 250.00 260.00 270.00 280.00 290.00 300.00 310.00 320.00 330.00 340.00

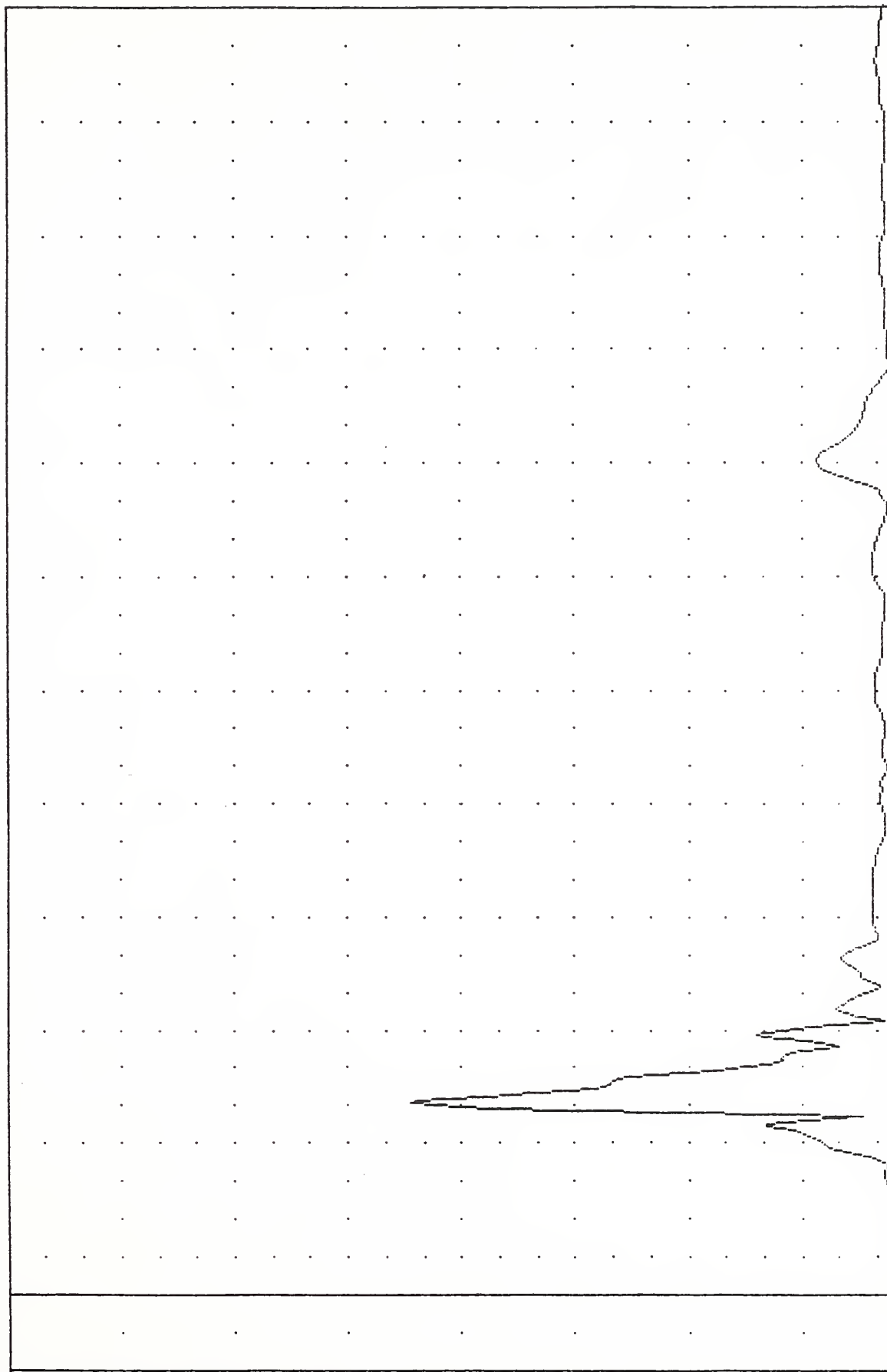
TIME (msec)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER UPPER SPINE RESULTANT

TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T01RGA

PLU1 DATE 15-NOV-84 15:50:45
 FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = 0.22g 0.00g 212.23g 50.00g

ACCELERATION (G)
 -10.00
 -40.00
 -90.00
 -140.00
 -190.00
 -240.00
 -290.00
 -340.00
 -390.00

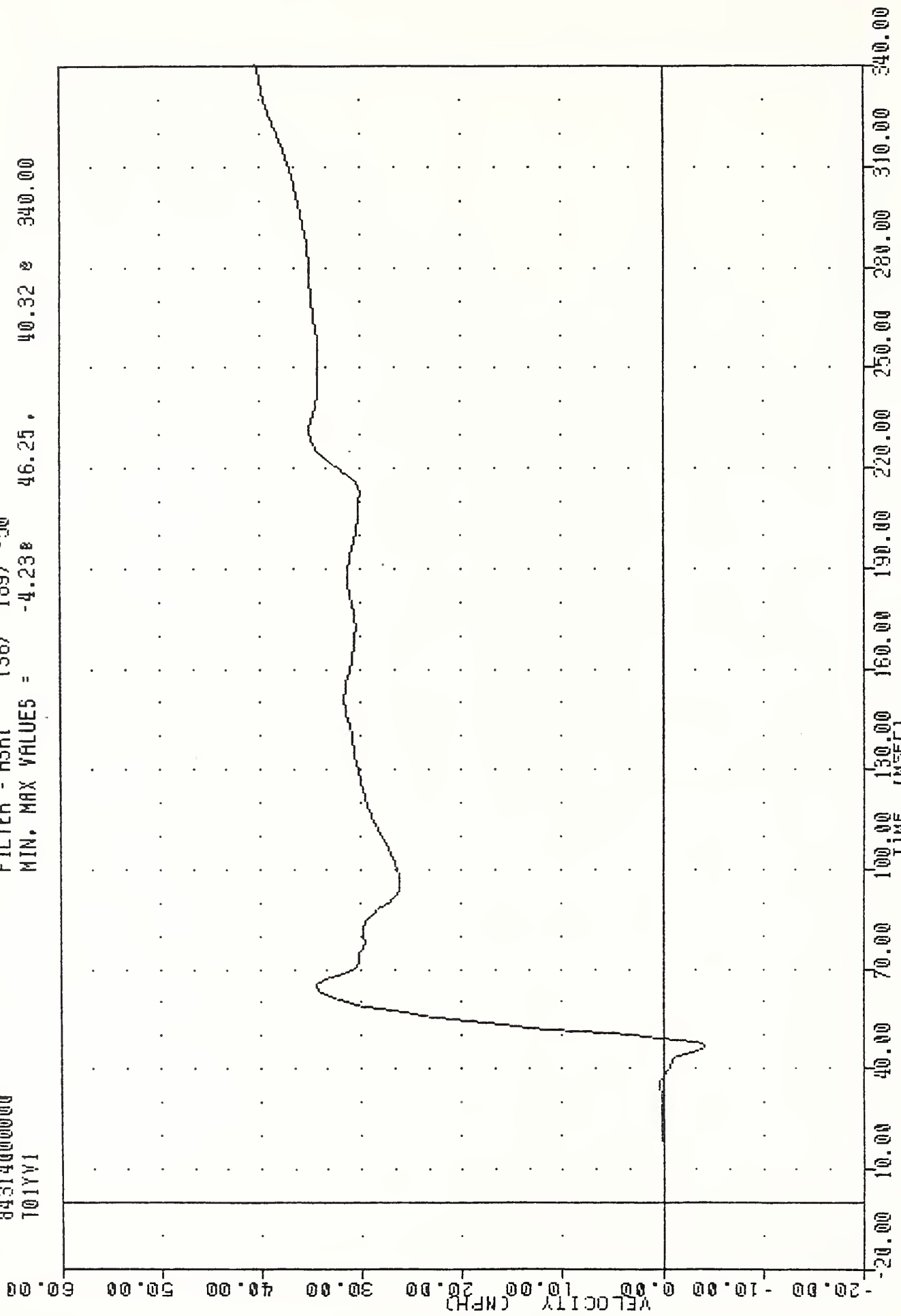


-20.00 10.00 20.00 30.00 40.00 50.00 60.00 70.00 80.00 90.00 100.00 110.00 120.00 130.00 140.00 150.00 160.00 170.00 180.00 190.00 200.00 210.00 220.00 230.00 240.00 250.00 260.00 270.00 280.00 290.00 300.00 310.00 320.00 330.00 340.00

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER UPPER SPINE RESULTANT USING T01YGA

TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
T01YV1

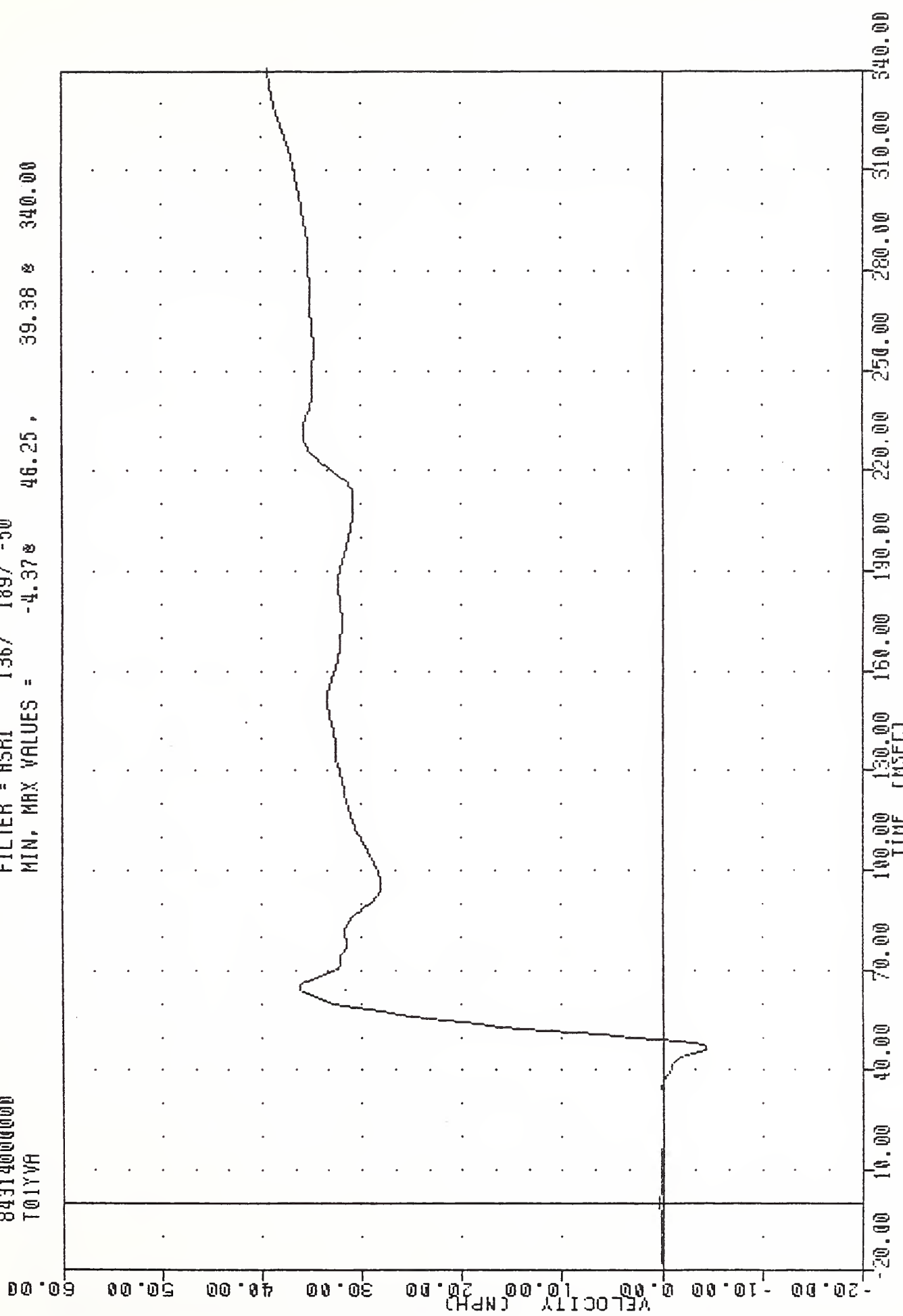
PL01 DATE 15-NOV-84 15:51:03
FILTER = HSRI 136/ 189/ -50
MIN, MAX VALUES = -4.23 40.32 340.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING T01YV1

TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T01YVA

PL01 DATE 15-NOV-84 15:51:03
 FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -4.37 39.38 340.00

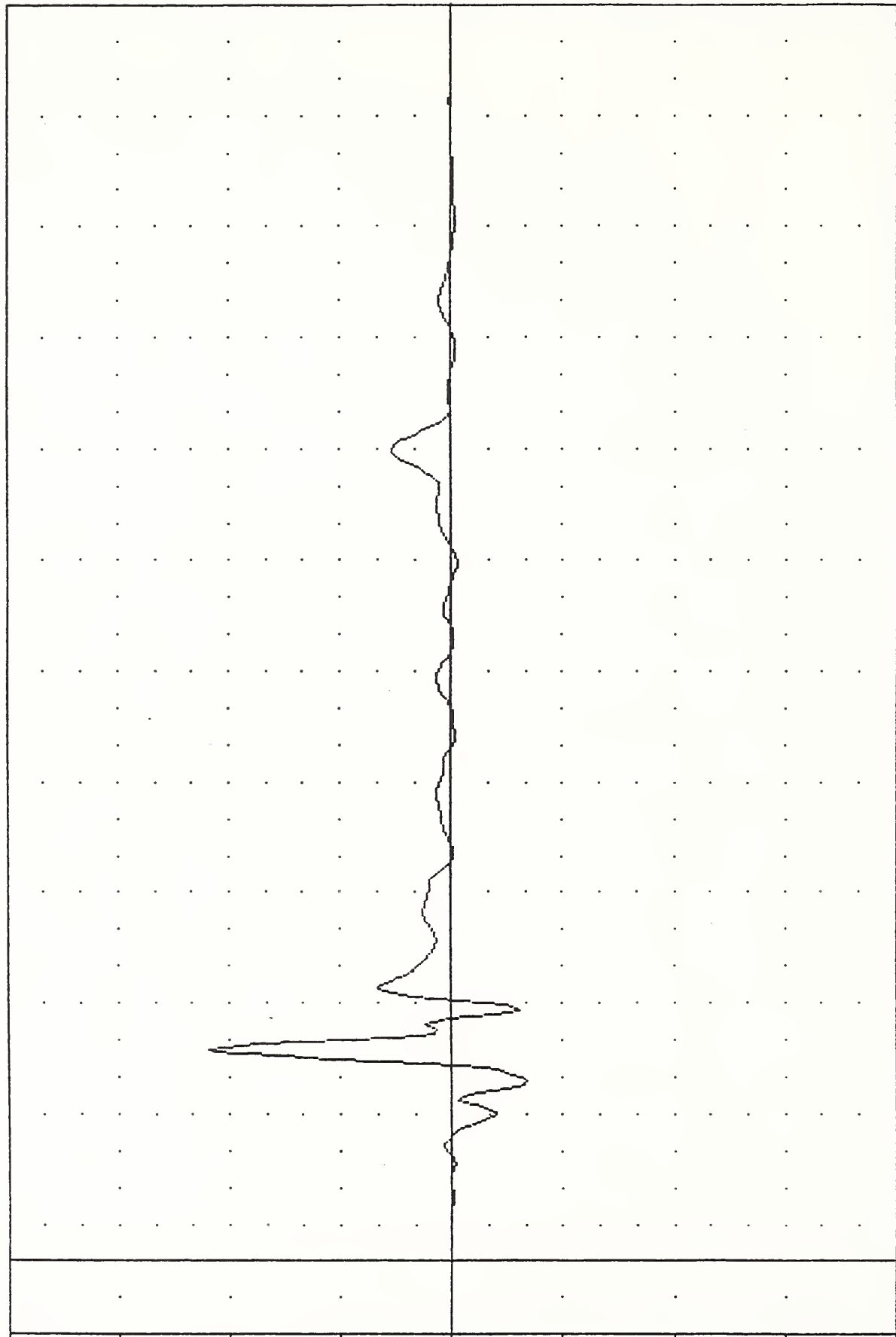


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING T01YGA

TAC , 841103
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T12X61

PL01 DATE 15-NOV-84 15:49:47
 FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -33.27% 48.13, 109.71 e 56.87

ACCELERATION (G)
 200.00
 150.00
 100.00
 50.00
 0.00
 -50.00
 -100.00
 -150.00
 -200.00



-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00
 TIME (NSEC)
 MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER LOWER SPINE ACCELERATION X AXIS

TRC 841109 PLD1 DATE 19-NOV-84 14:24:09

SIDE AGGRESSIVE ATTRIBUTES

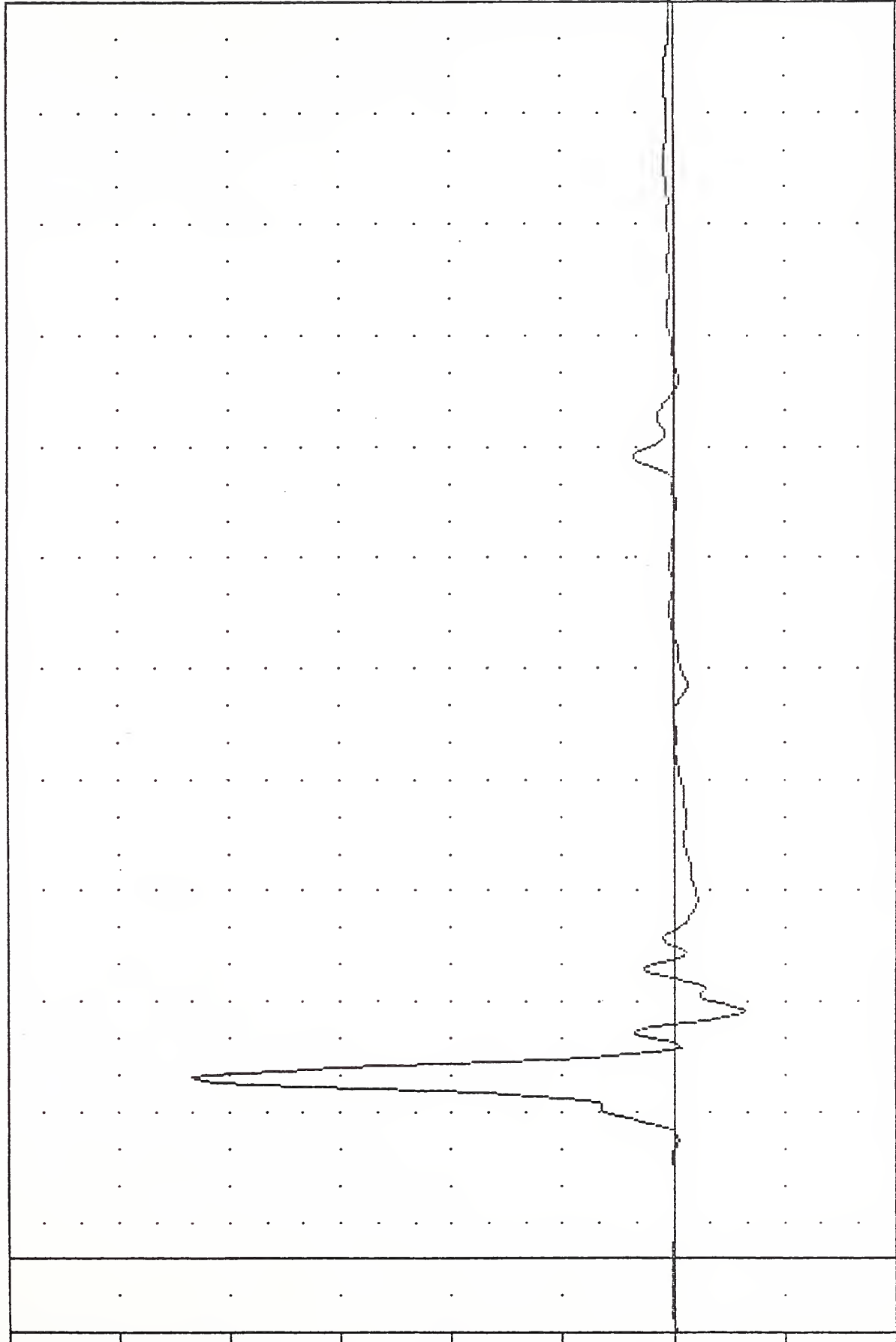
84314000000

T12Y61

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -32.03 66.87 216.64 48.75

ACCELERATION (G)
-100.00 -50.00 0.00 50.00 100.00 150.00 200.00 250.00 300.00



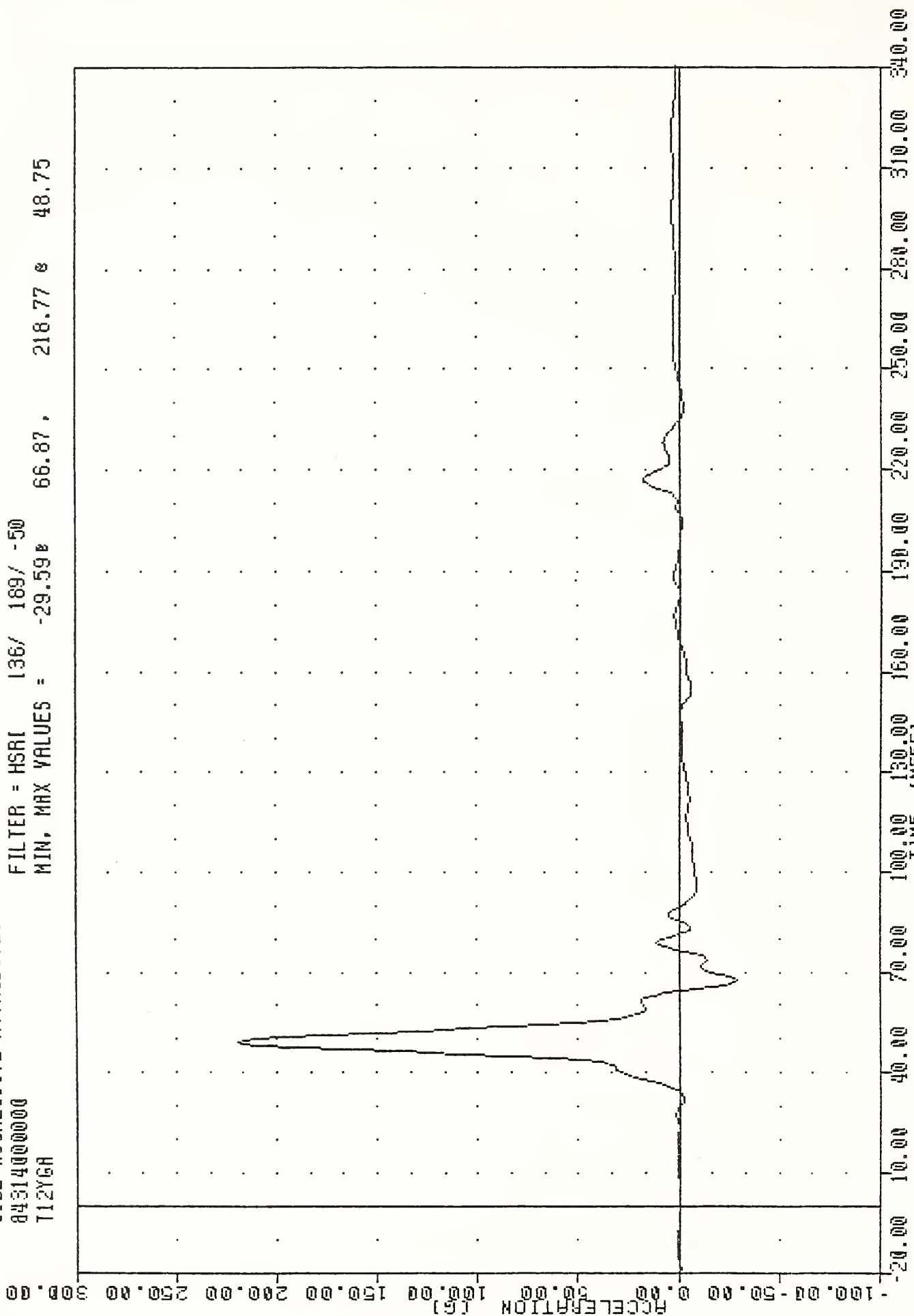
-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER LOWER SPINE ACCELERATION Y AXIS

PLU1 UATE 19-NOV-84 14:24:09

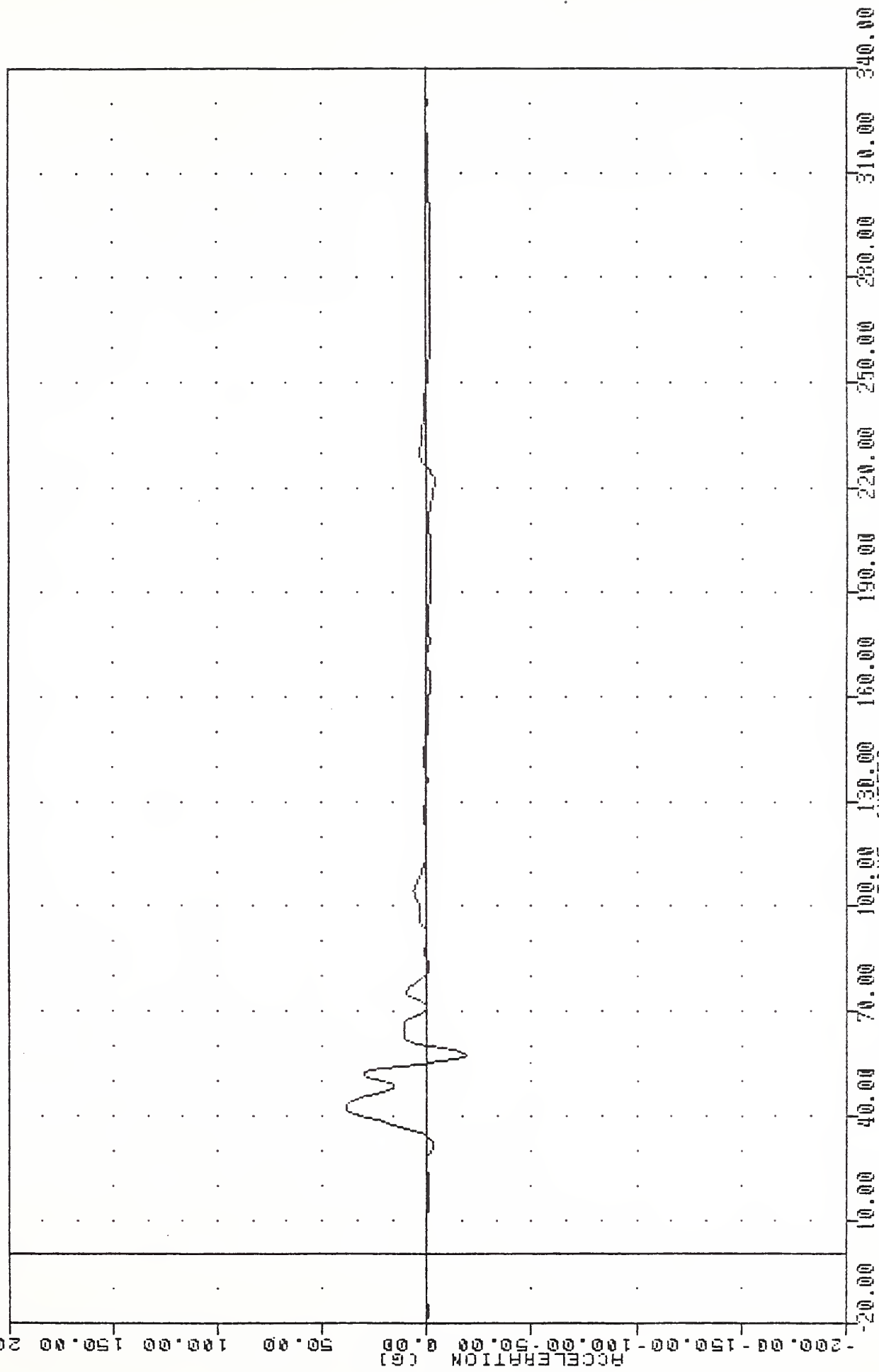
IRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
T12YGR

FILTER = HSRI 136/ 189/ -50
MIN, MAX VALUES = -29.59g 66.87, 218.77 g 48.75



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER LOWER SPINE ACCELERATION -2 Y AXIS

TAL 041109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T12261
 FLD, DATE 15-NOV-84 15:49:47
 FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = -18.758 56.87, 38.82 41.87



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER LOWER SPINE ACCELERATION Z AXIS

TAC 04109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
T12RG1

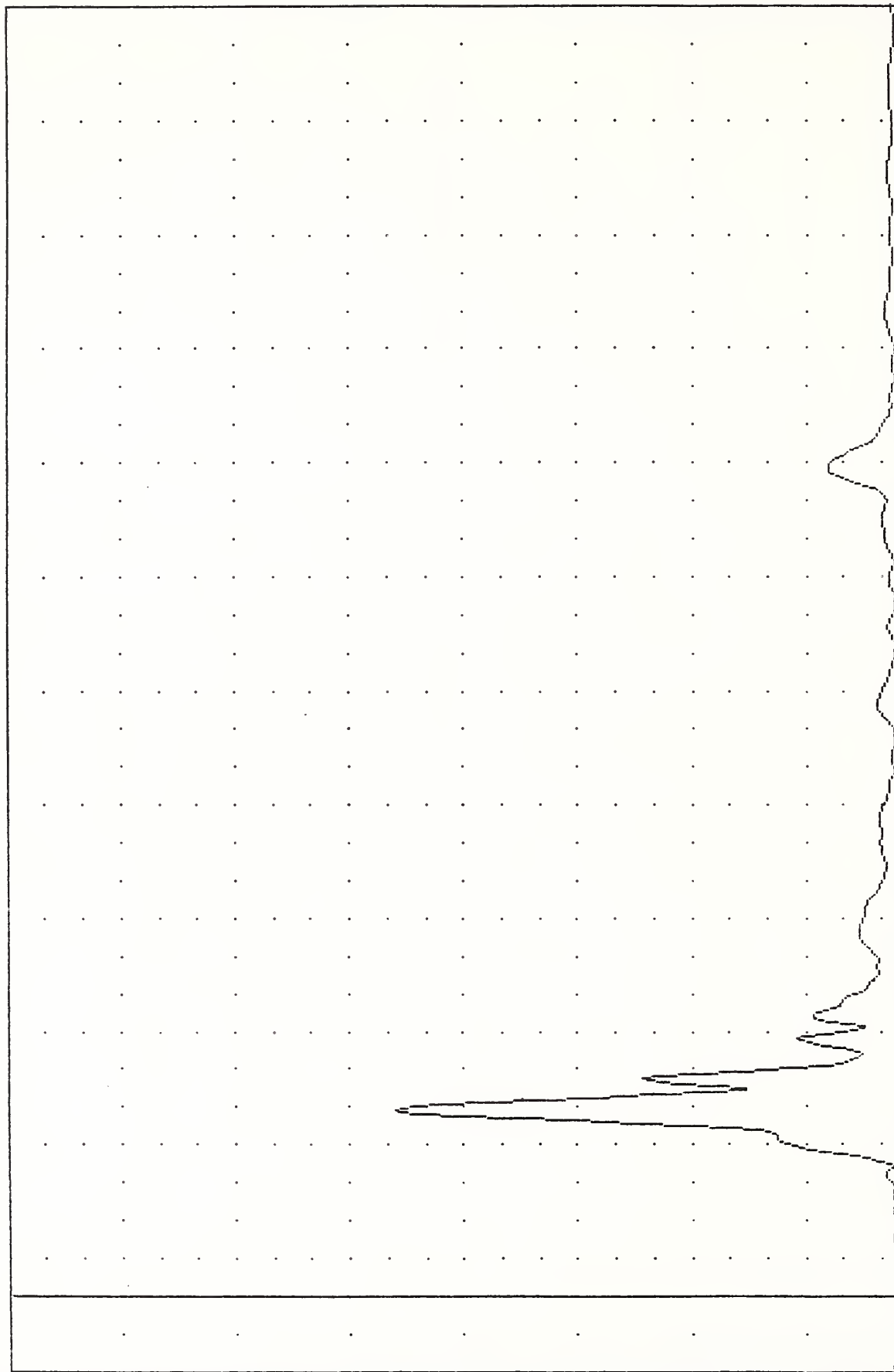
PLU DATE 15-MAY-84 13:43:47

FILTER = HSR 136/ 189/ -50

MIN. MAX VALUES = 0.080 5.62, 219.79 0 48.75

ACCELERATION (G)

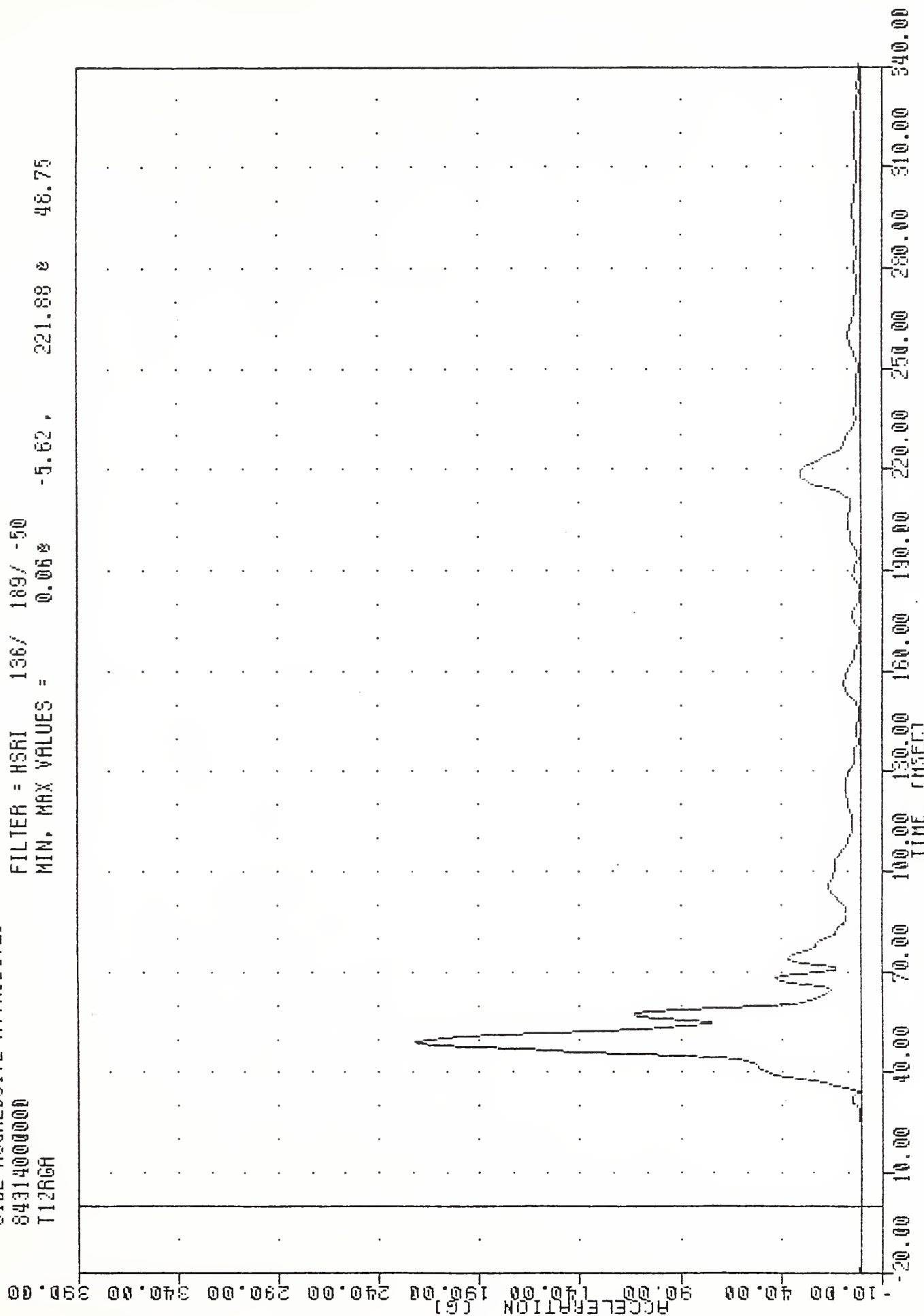
B-18



-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00
TIME (MSEC)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER LOWER SPINE RESULTANT

TRC 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T12RCH
 PLU DATE 15-MAY-84 15:50:45
 FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = 0.068 -5.62 221.88 48.75



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER LOWER SPINE RESULTANT USING T12YGN

TAL 841109 15-MAY-84 15:31:03

SIDE AGGRESSIVE ATTRIBUTES

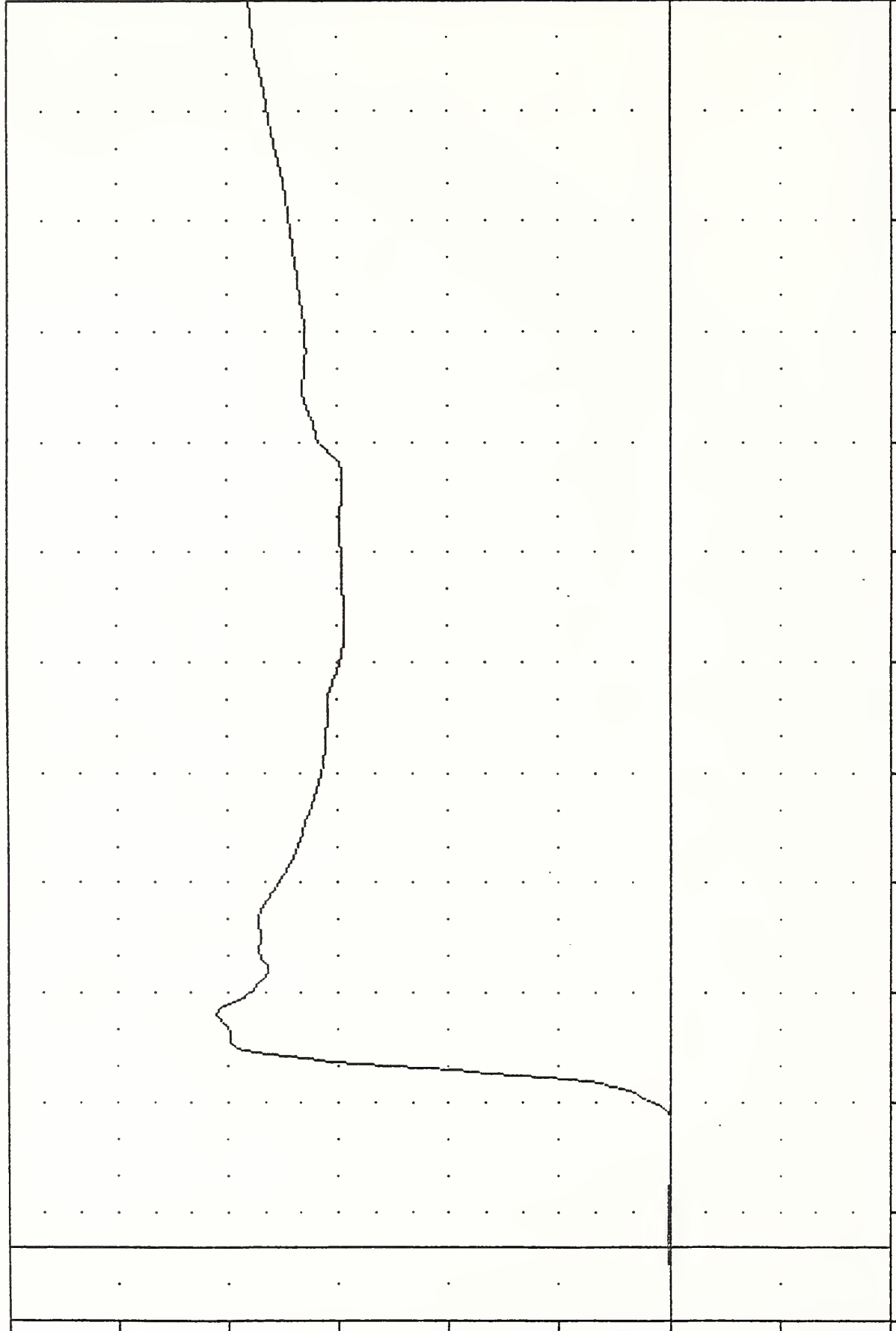
84314000000

T12YV1

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -0.200 33.75, 40.97 63.13

VELOCITY (MPH)

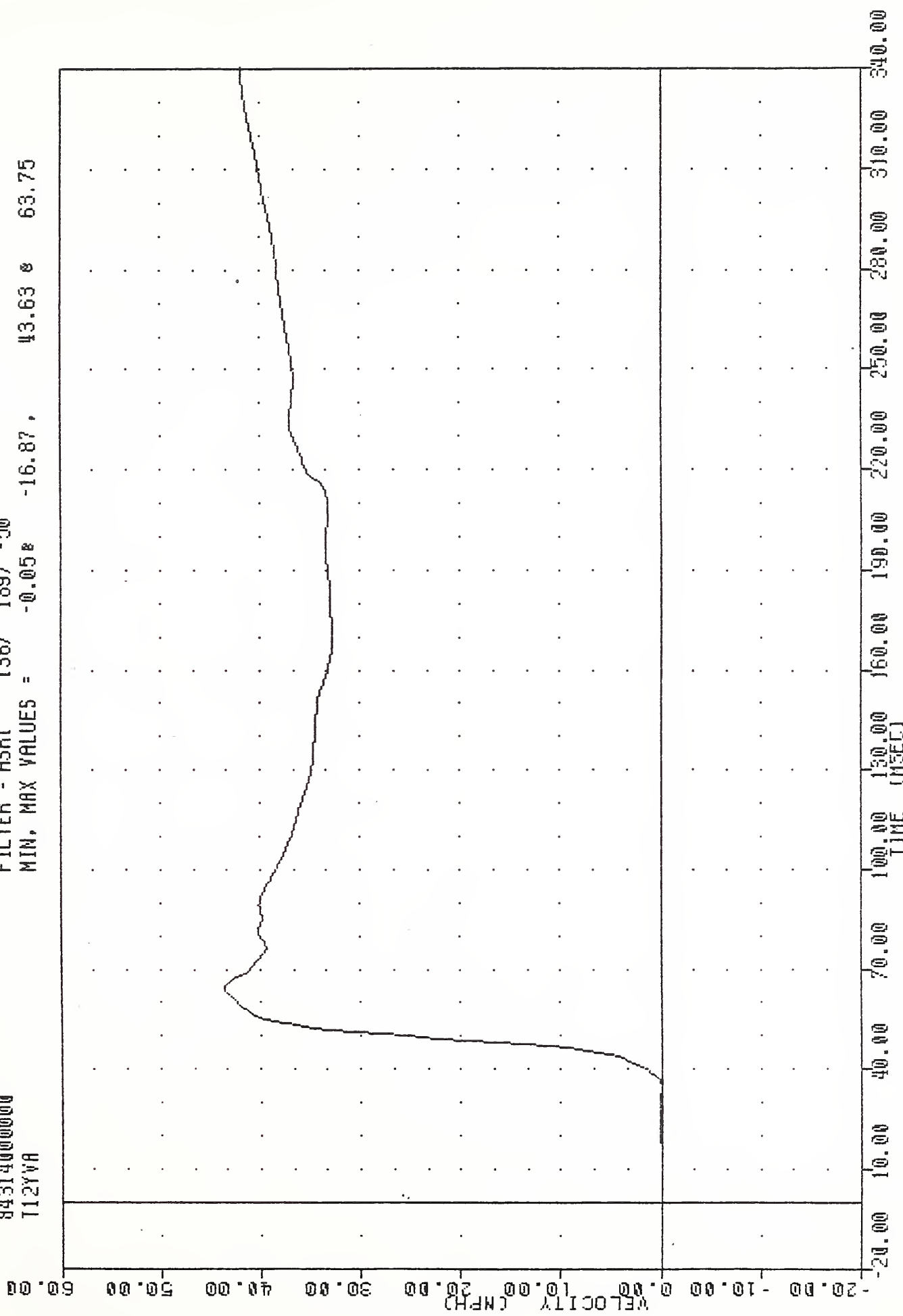


-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT

DELTA V USING T12YV1

TRC , 841109 PLG DATE 15-MAY-84 13:31:03
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T12YVA
 FILTER = HSR 136/ 189/ -50
 MIN. MAX VALUES = -0.058 -16.87, 43.63 63.75



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING T12YGA

TRC , 841109

PLU DATE 19-NOV-84 14:24:09

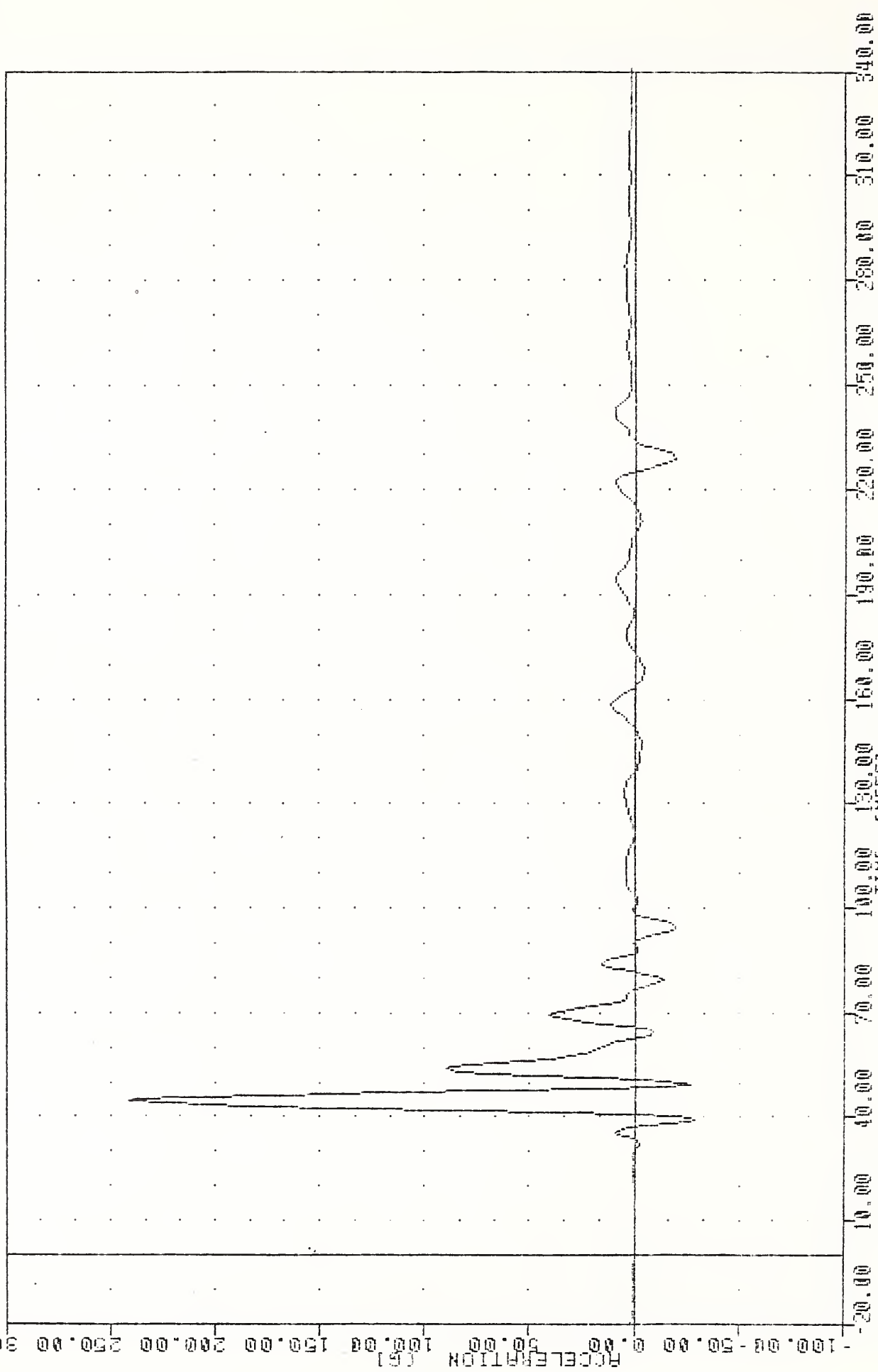
SIDE AGGRESSIVE ATTRIBUTES

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -28.59 38.75, 241.81 43.75

84314000000

LURY61



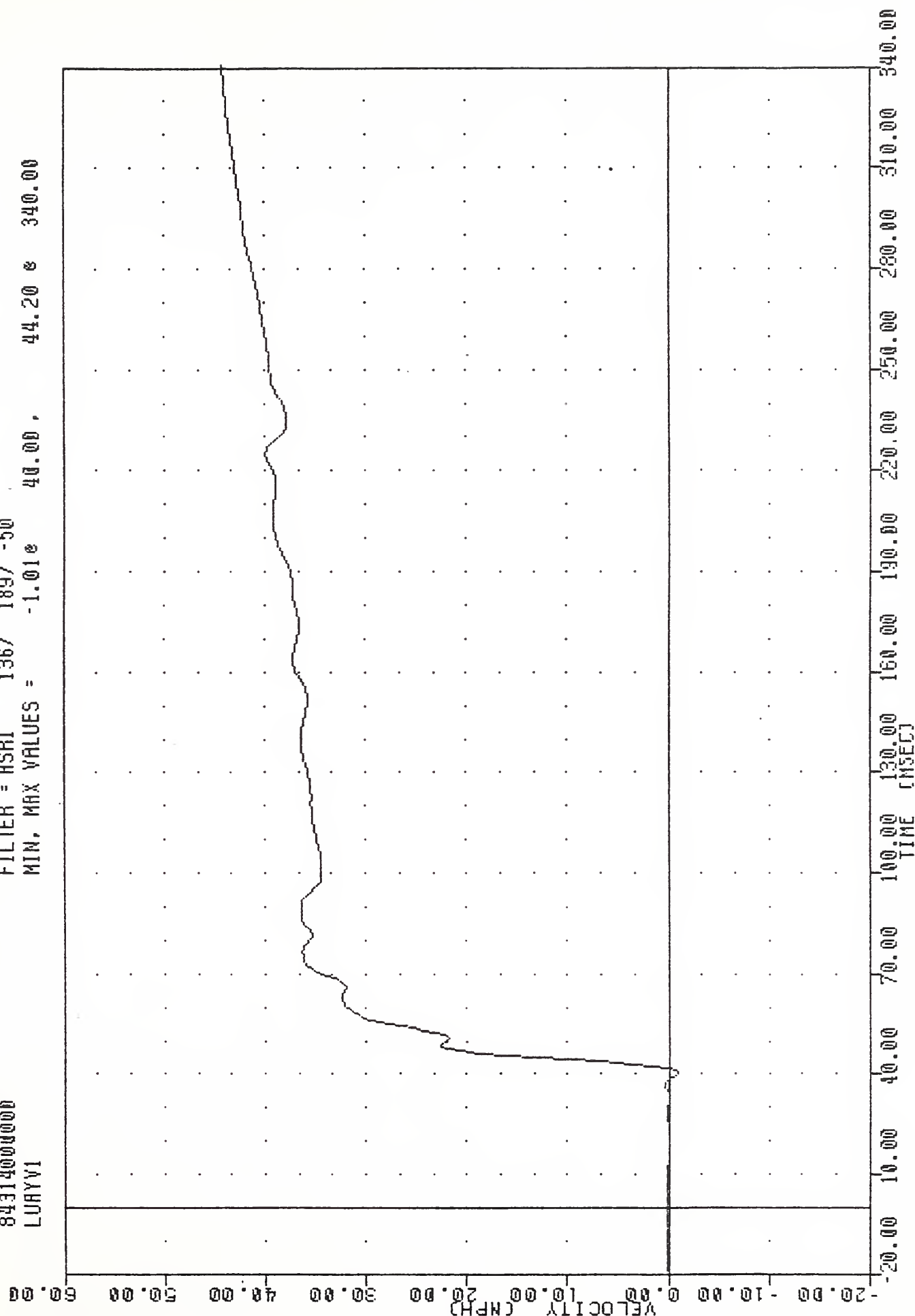
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER LEFT UPPER RIB ACCELERATION Y AXIS

TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LURYV1

PLU1 DATE 15-NOV-84 15:51:03

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -1.01e 40.00 , 44.20 e 340.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING LURY61

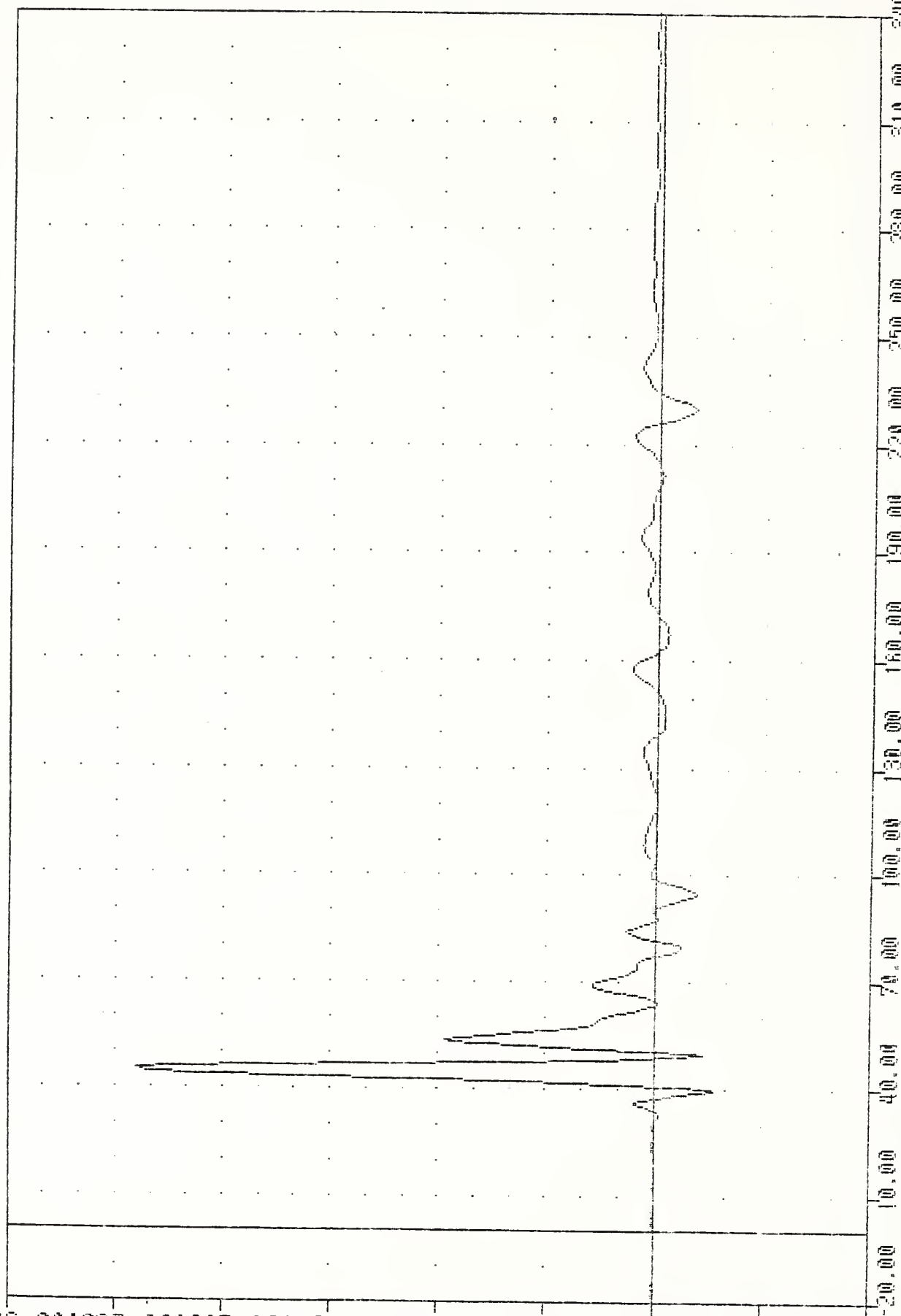
TAC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 8431400000
 LURY6A

PLOT DATE 19-NOV-84 14:24:09

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -28.018 38.75 , 240.77 44.38

ACCELERATION (G)



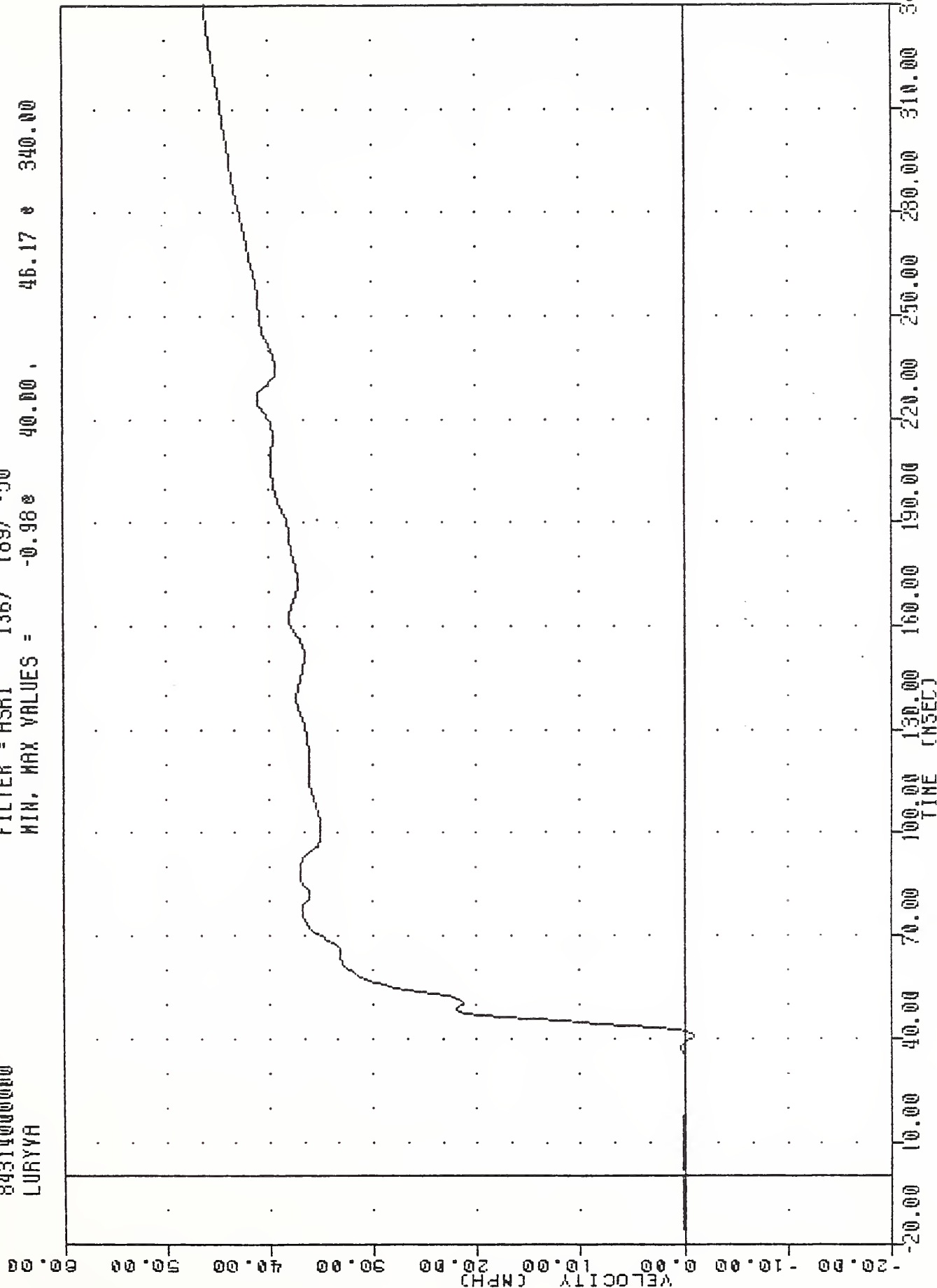
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER LEFT UPPER RIB ACCELERATION -2 Y AXIS

TAC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LURYVA

PLOT DATE 15-NOV-84 15:51:03

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -0.980 40.00 , 46.17 0 340.00



TRC , 841109 FLUT DATE 19-NOV-84 14:24:09

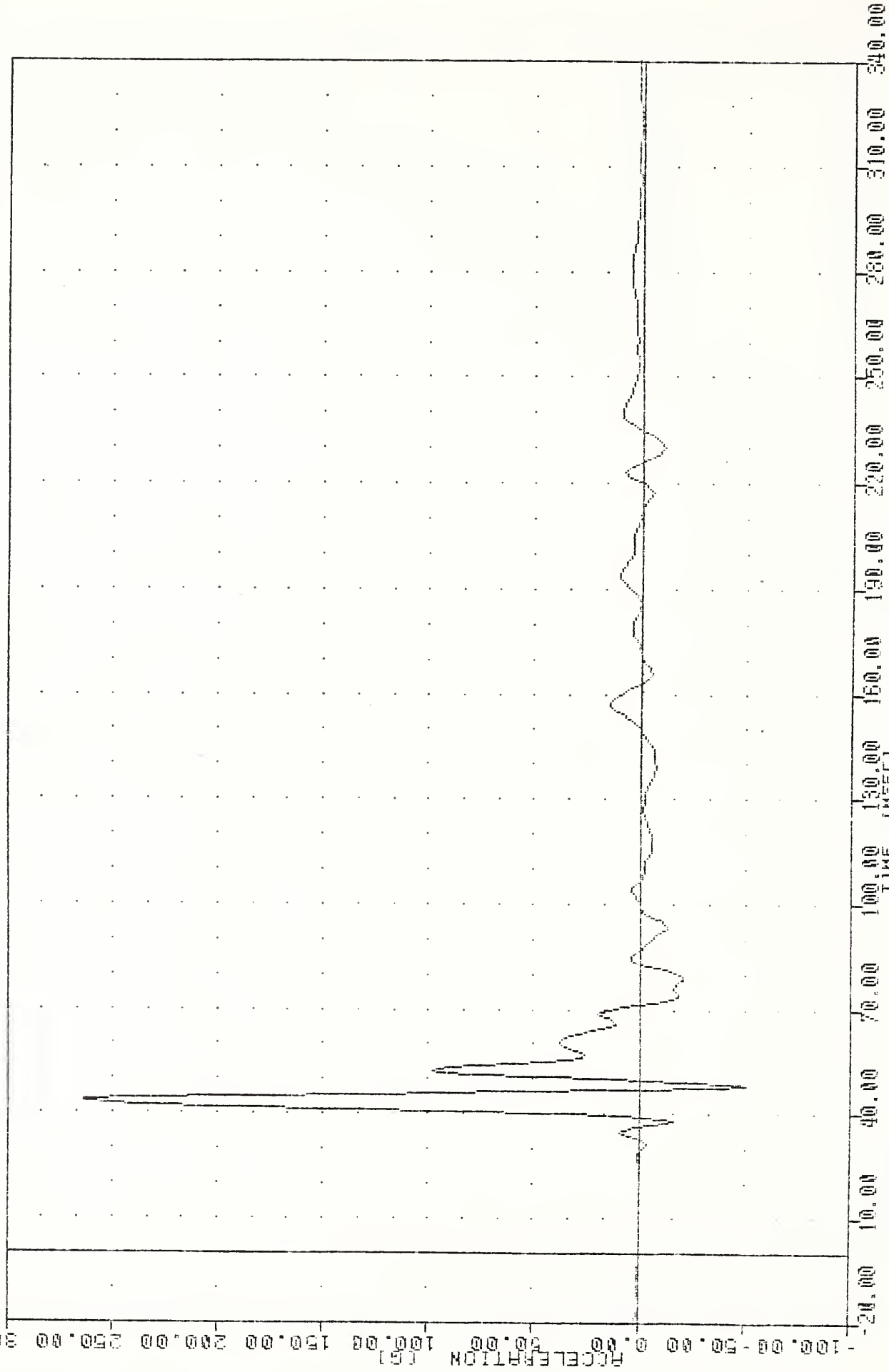
SIDE AGGRESSIVE ATTRIBUTES

8431400000

LLRYG1

FILTER = HSR1 136/ 189/ -50

MIN. MAX VALUES = -51.26e 47.50 , 263.75 e 43.13



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER LEFT LOWER AIR ACCELERATION Y AXIS

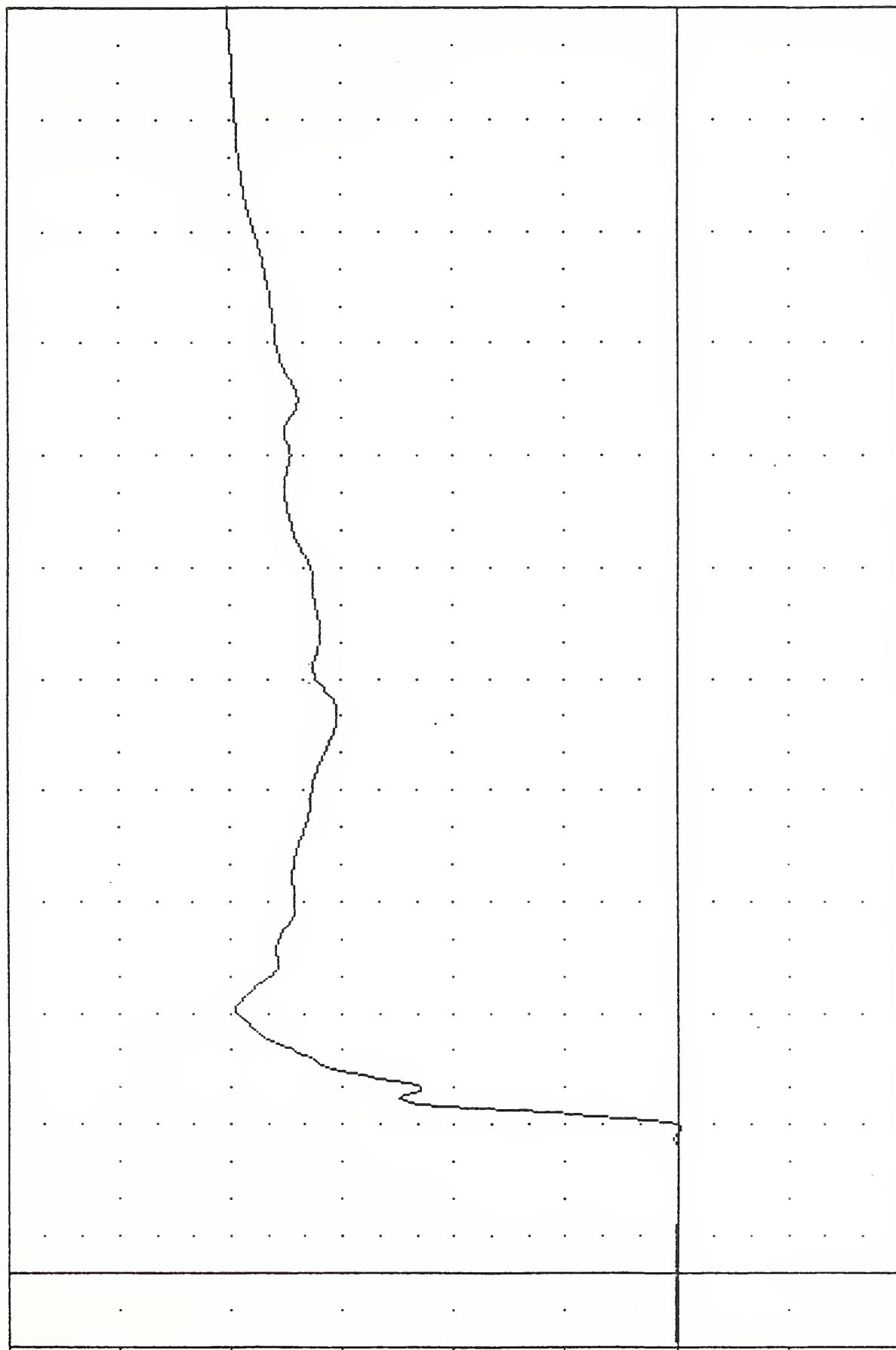
TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LLRYV1

PLOT DATE 15-NOV-84 15:51:03

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -0.34 0 38.75, 40.30 & 340.00

VELOCITY (MPH)



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING LLRYG1

TRC 841109 , 841109 PLOT DATE 19-MOV-84 14:24:09

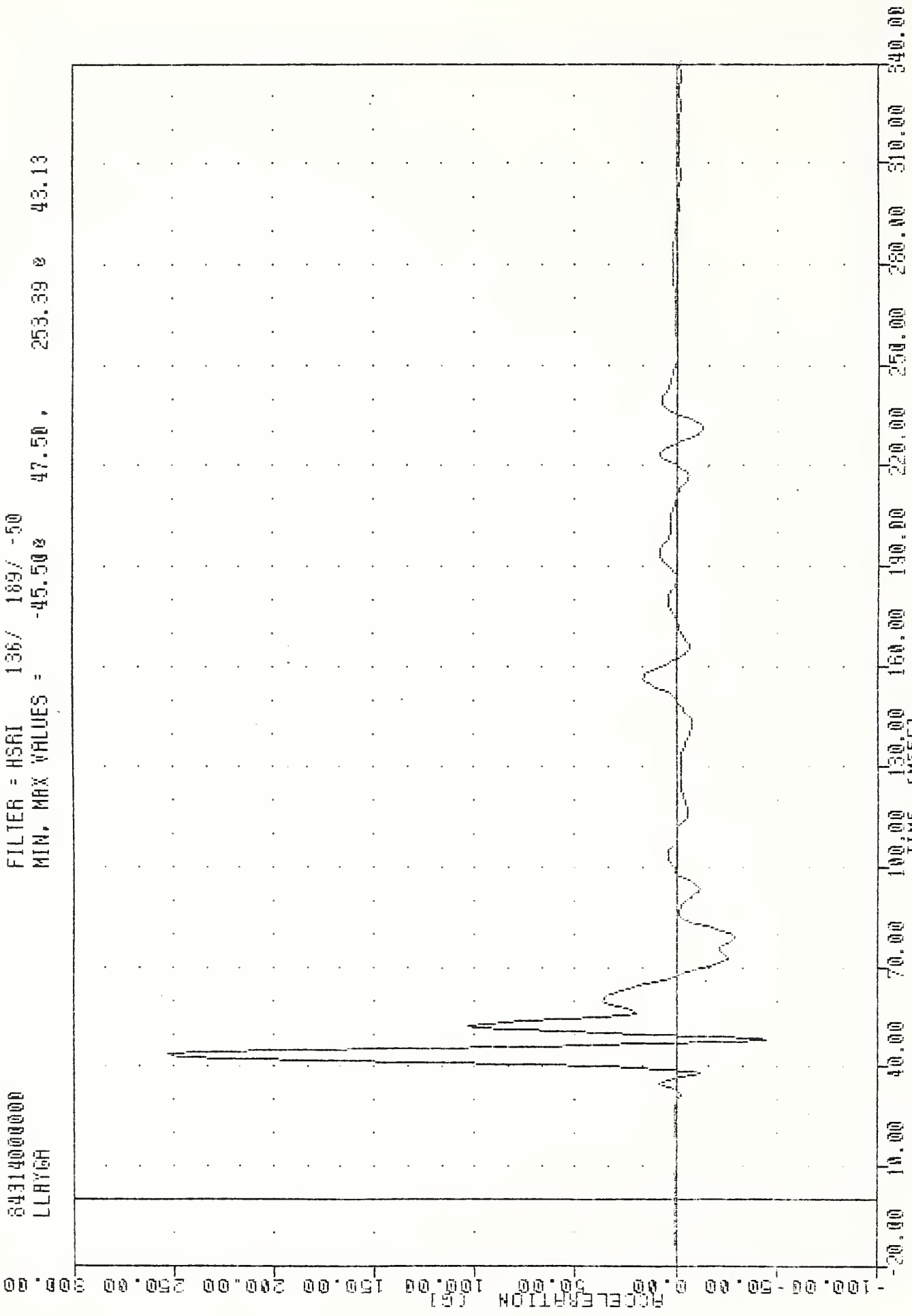
SIDE AGGRESSIVE ATTRIBUTES

84314000000

LLAYCA

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -45.500 47.50 , 253.39 0 43.13



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT

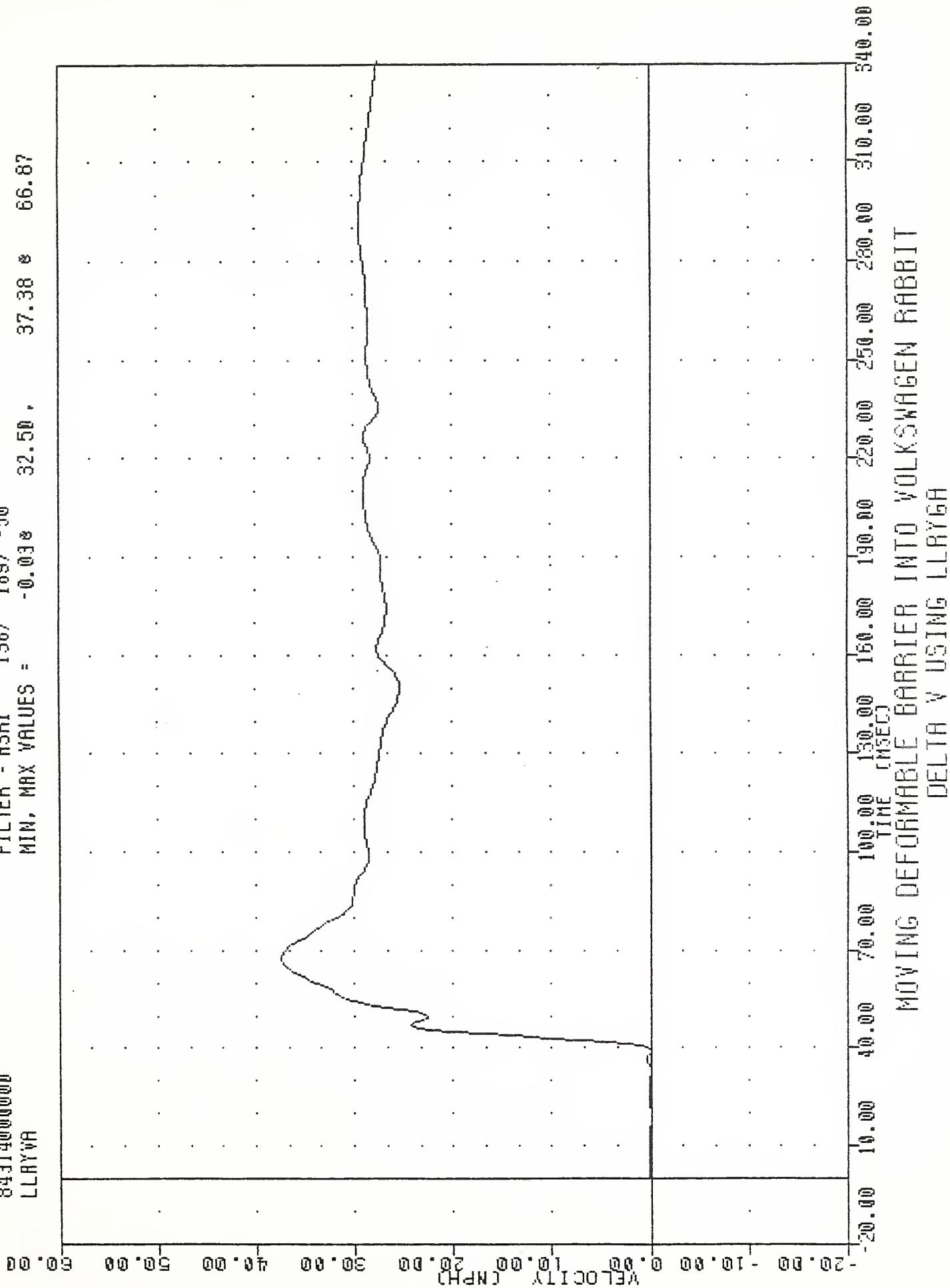
DRIVER LEFT LOWER RIB ACCELERATION #2 Y AXIS

TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 8431400000
 LLAYVA

PLOT DATE 15-NOV-84 15:51:03

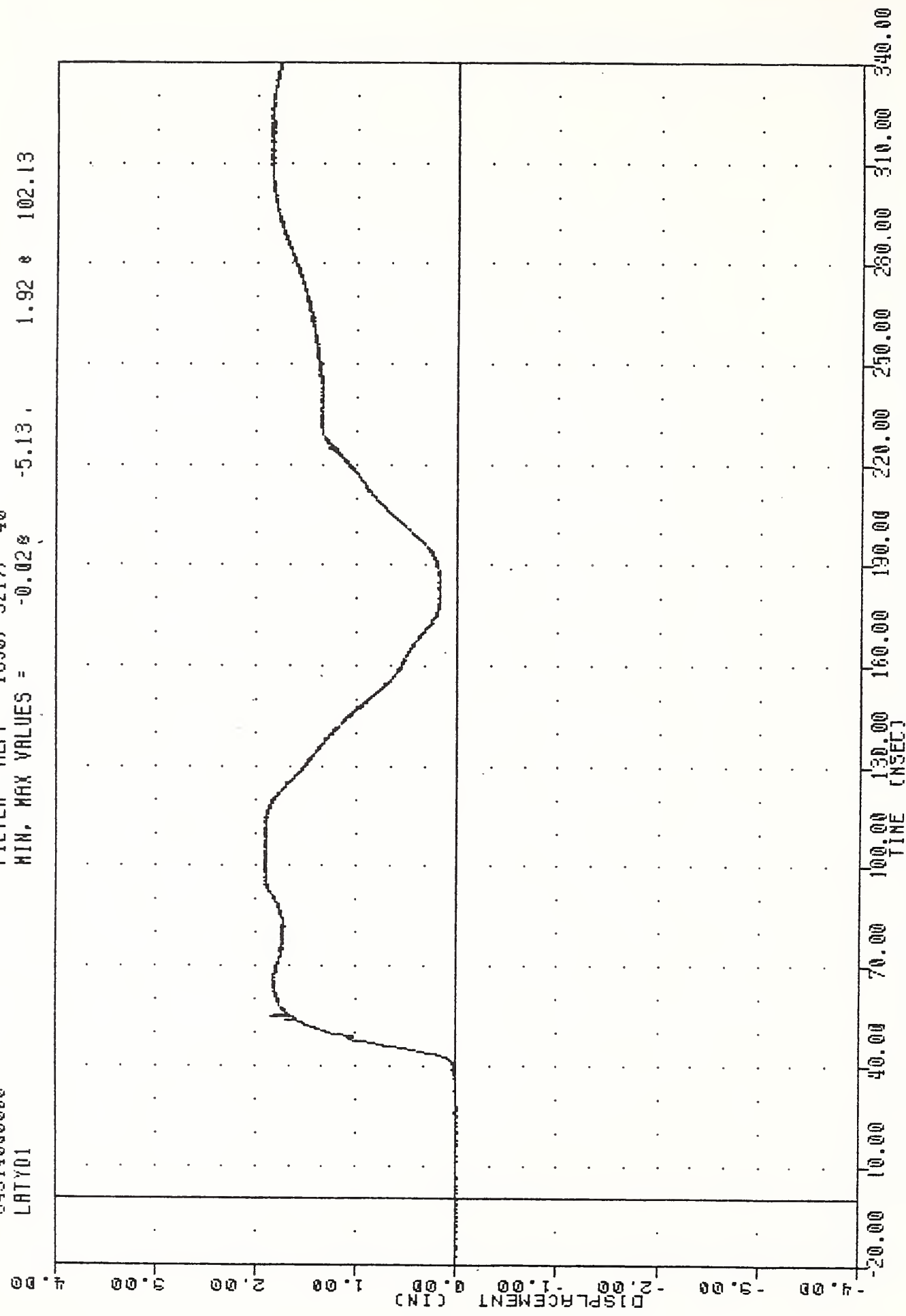
FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -0.038 32.50, 37.38 66.87



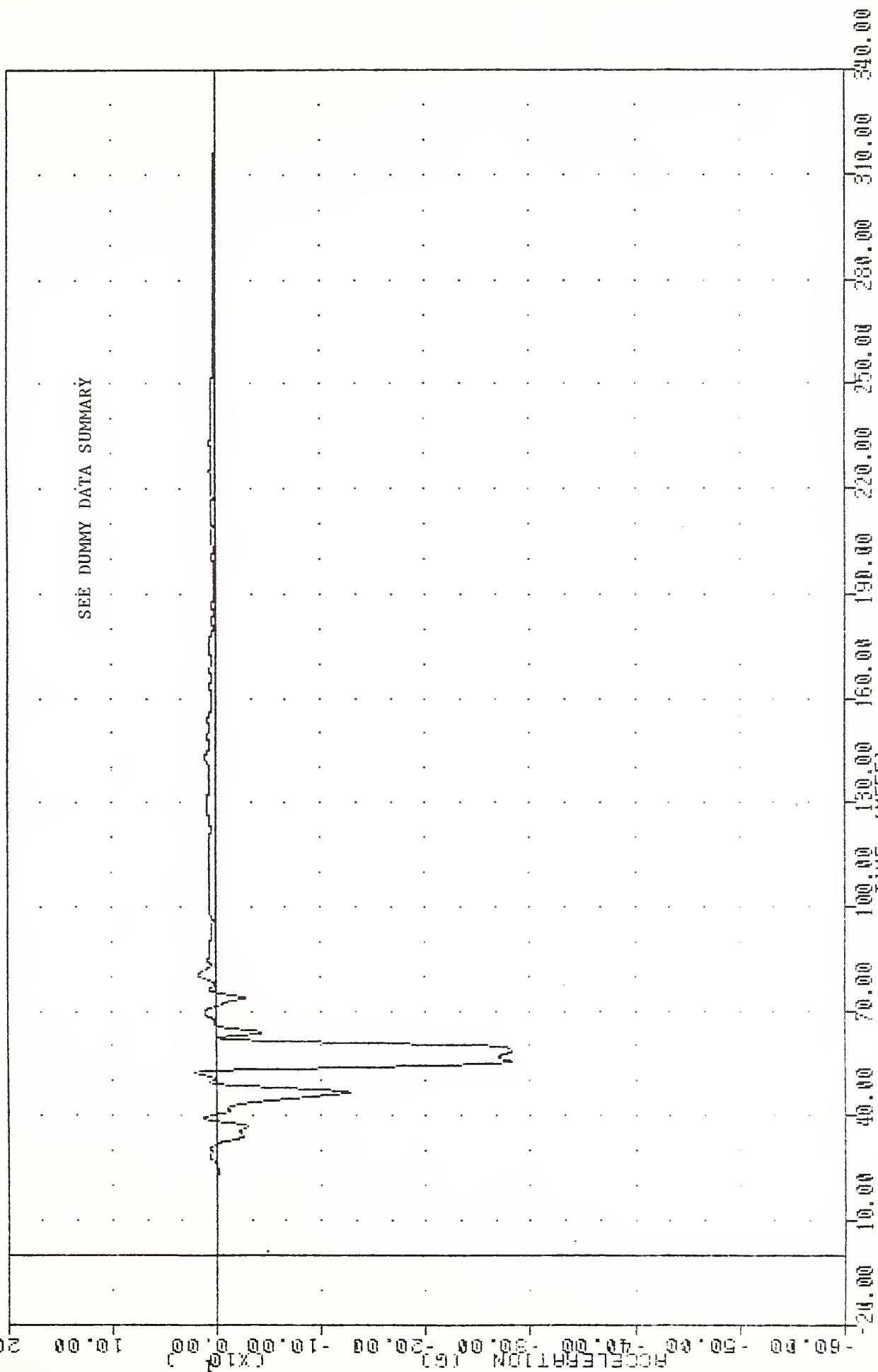
TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 LATY01

PL01 DATE 15-NOV-84 15:49:06
 FILTER = ALPF 1650/ 5217/ -40
 MIN. MAX VALUES = -0.028 -5.13 1.92 102.13



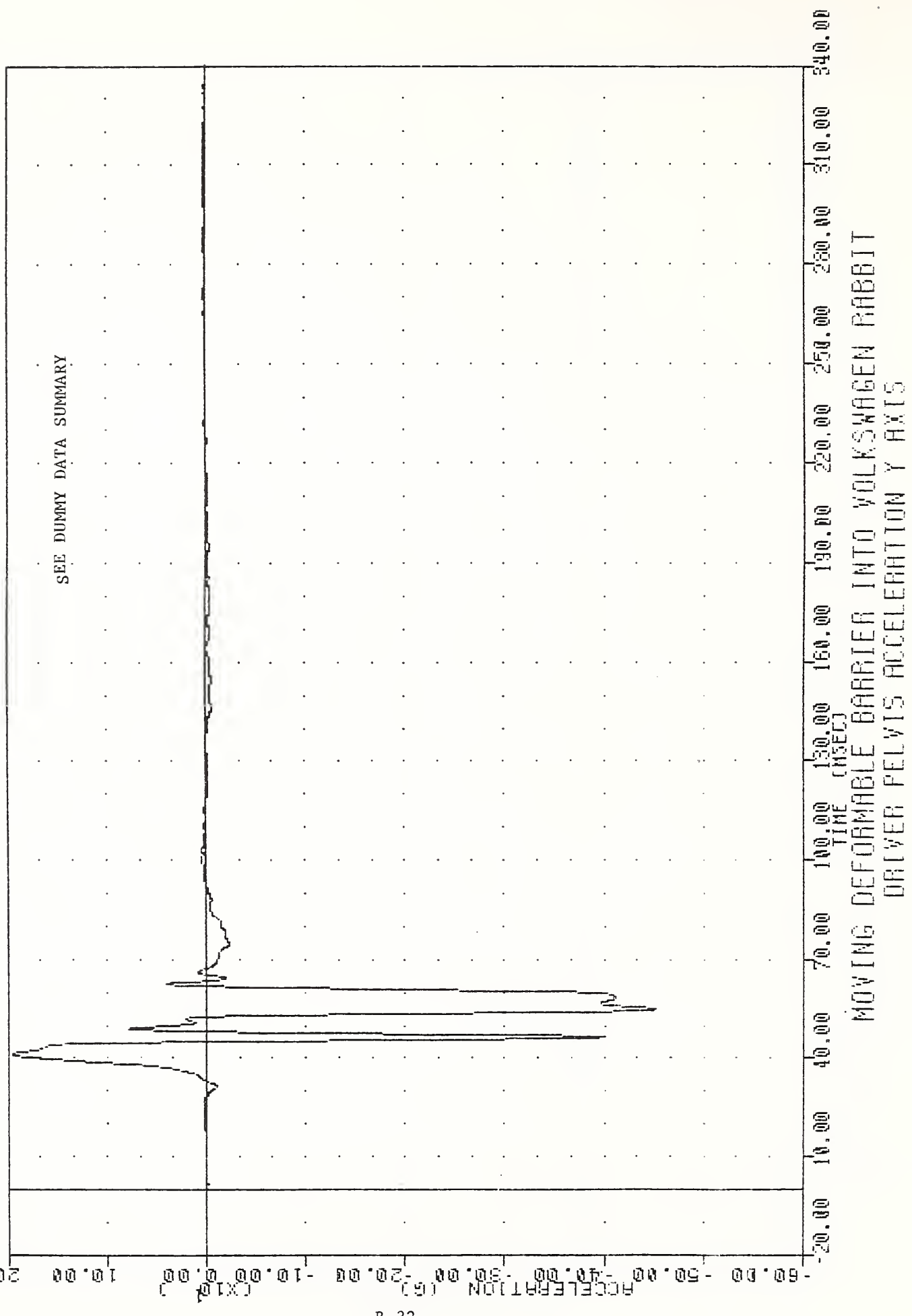
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER LEFT RIB TO SPINE DISPLACEMENT INCHES

TRC , 041109
 SIDE AGGRESSIVE ATTRIBUTES
 8431400000
 PEVXG1
 FLUI DATE 19-NOV-84 14:23:41
 FILTER = BLPF 300/ 949/ -40
 MIN, MAX VALUES = -282.478 55.50 , 21.34 52.25



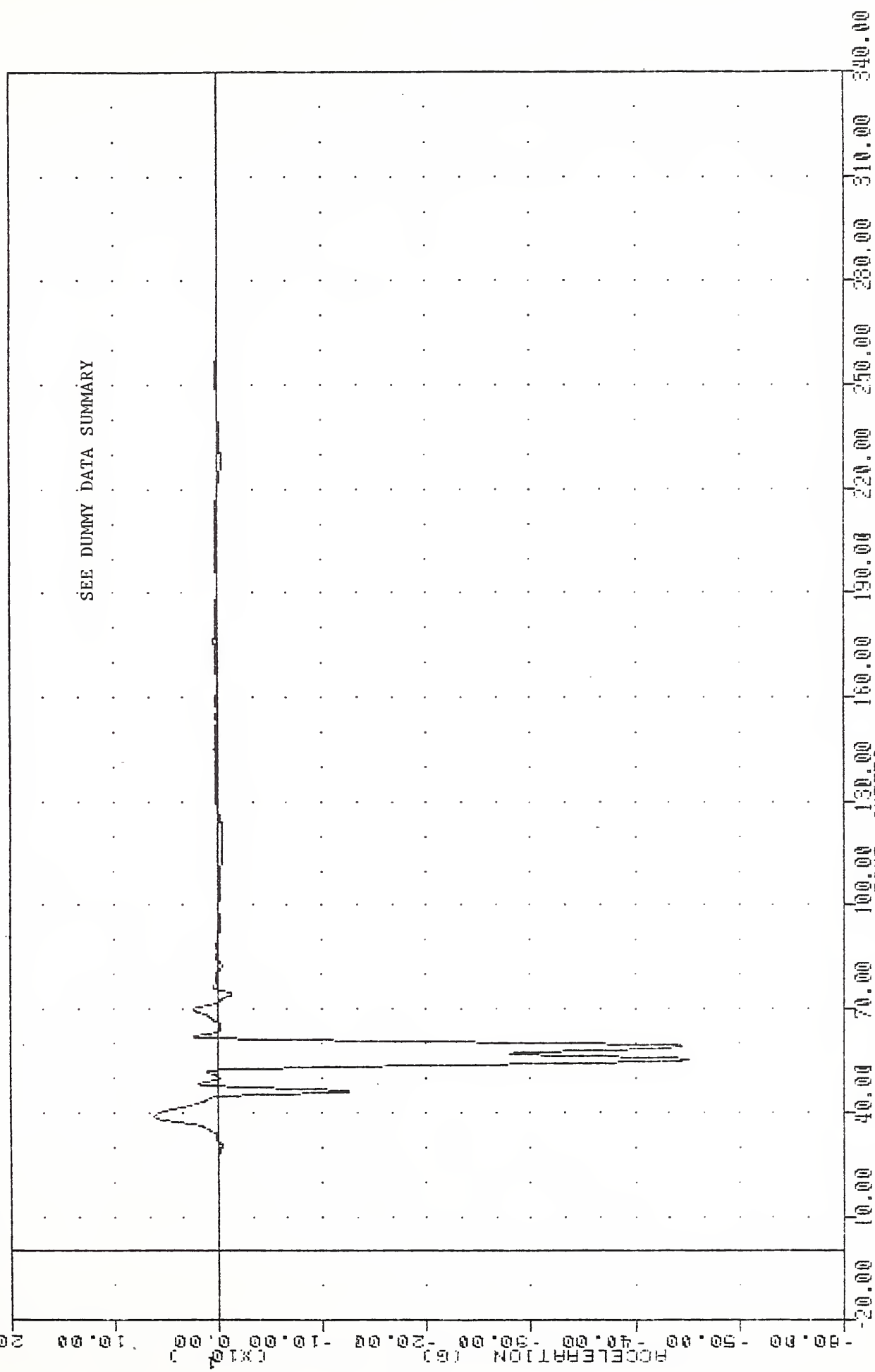
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER PELVIS ACCELERATION X AXIS

TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 PEVY61
 FILTER = BLPF 300/ 949/ -40
 MIN. MAX VALUES = -451.88e 54.88 , 195.49 e 41.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER PELVIS ACCELERATION Y AXIS

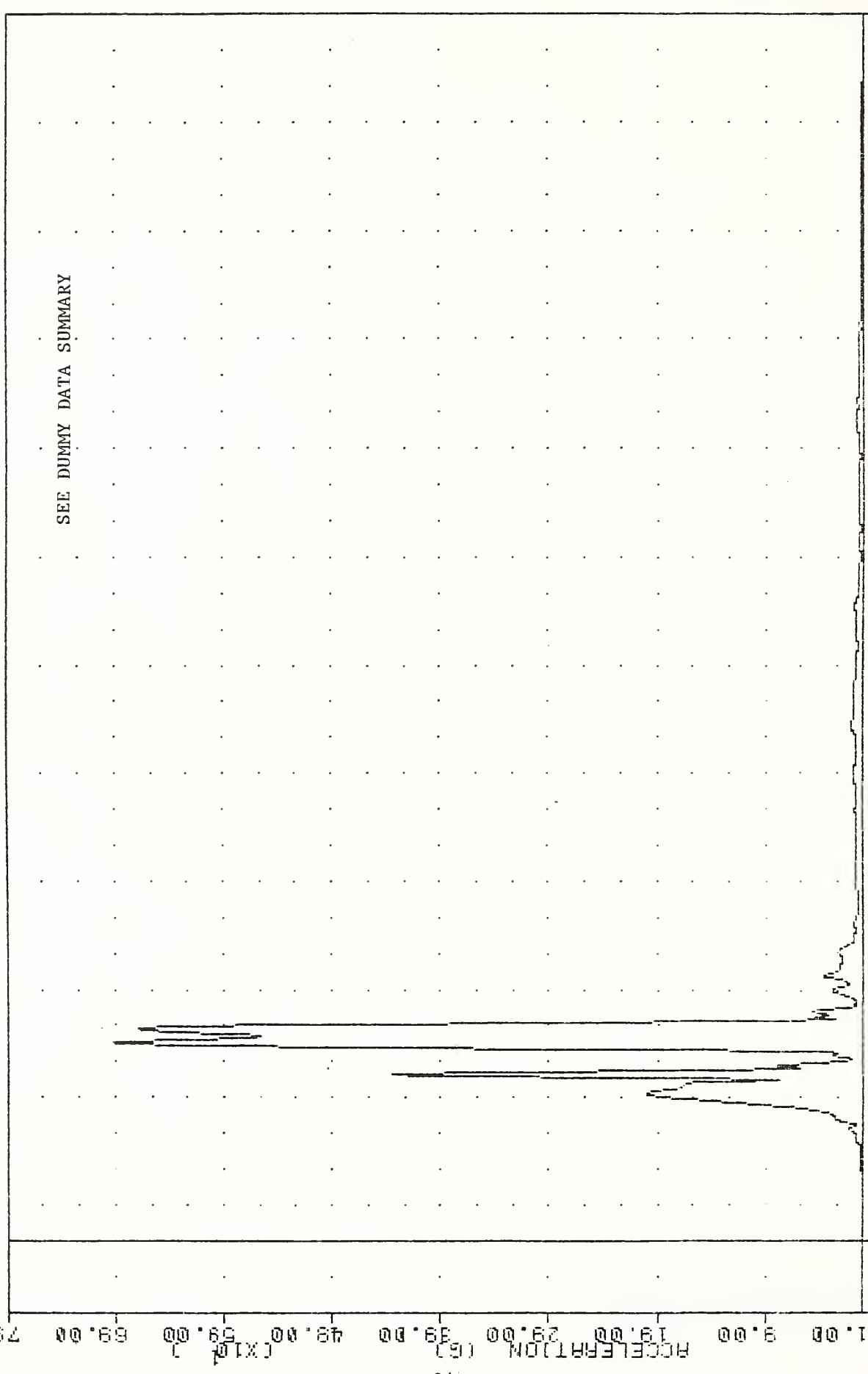
INC 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 PEVZ61
 FILTER = BLPF 300/ 949/ -40
 MIN. MAX VALUES = -451.710 55.13 60.85 0 38.75
 PLOT DATE 19-NOV-84 14:23:41



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER PELVIS ACCELERATION Z AXIS

TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 PEVRG1

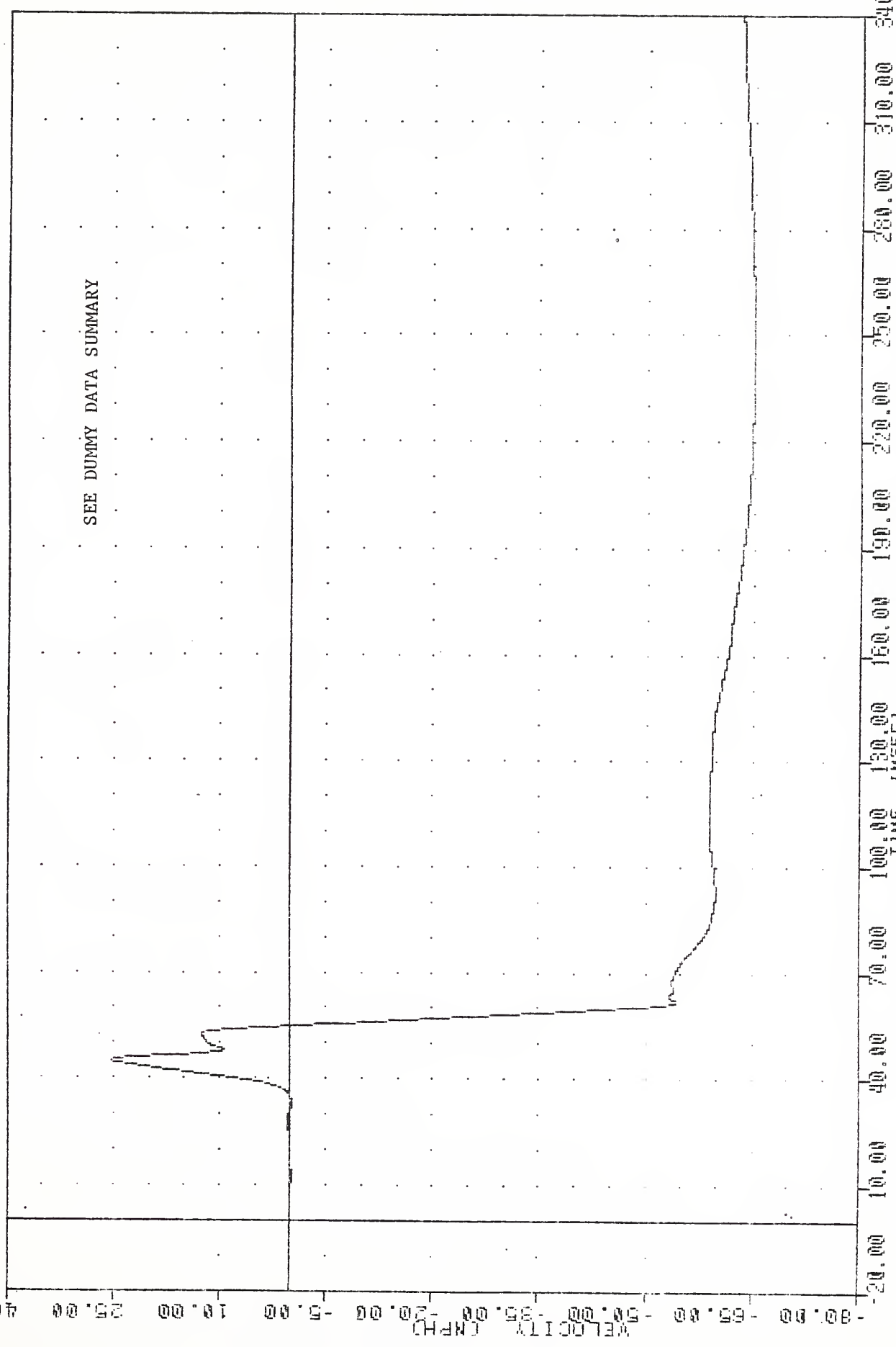
PL01 DATE 19-NOV-84 14:23:41
 FILTER = BLPF 300/ 949/ -40
 MIN. MAX VALUES = 0.030 -5.50 , 692.11 0 55.13



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER PELVIS RESULTANT

TRC 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 PEVYV1

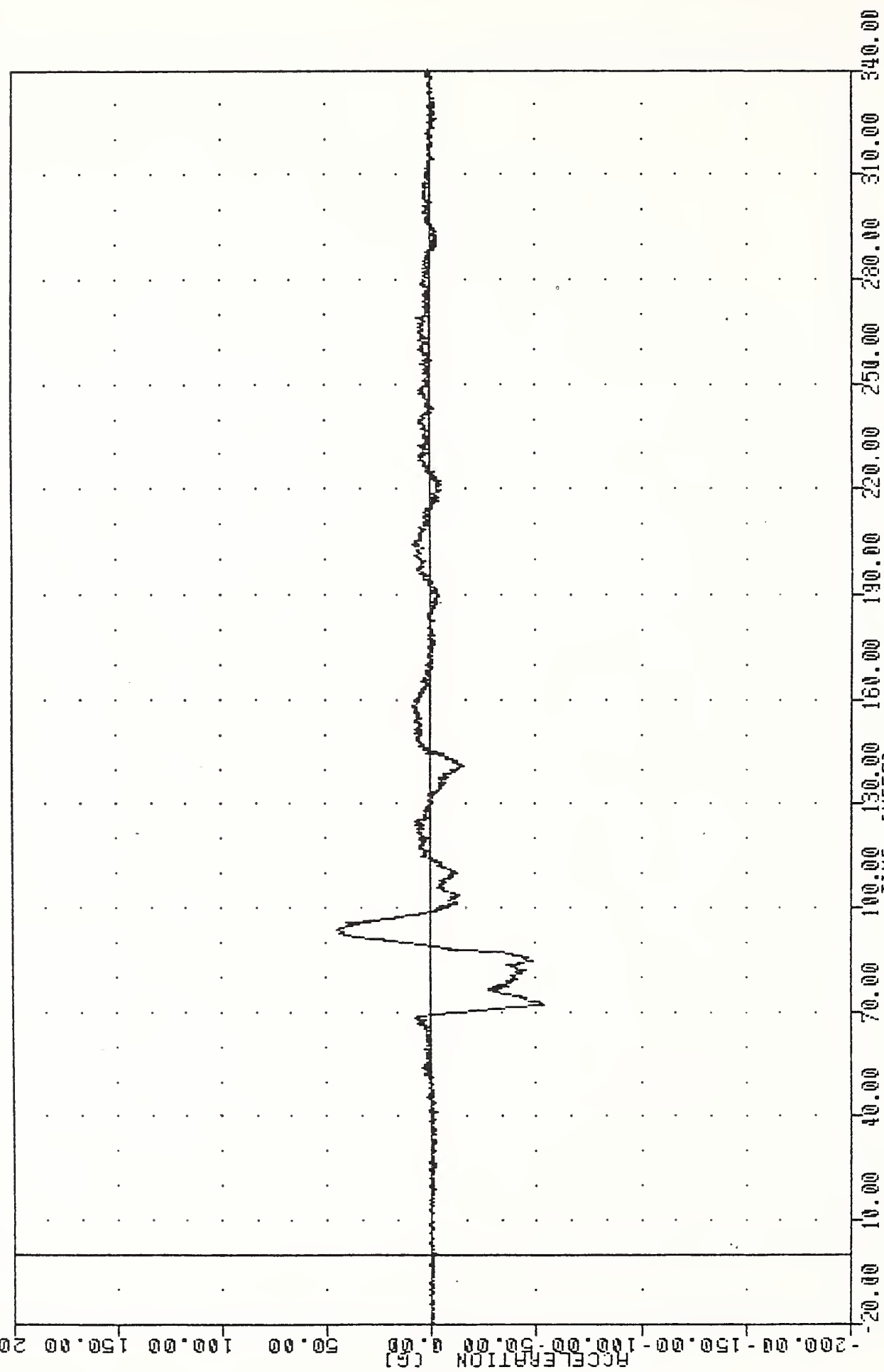
PLU1 DATE 19-NOV-84 14:26:30
 FILTER = ELFF 300/ 949/ -40
 MIN, MAX VALUES = -65.050 245.63 25.36 44.88



SEE DUMMY DATA SUMMARY

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING PEVYV1

TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 8431400000
 HEX63
 FILTER = ALPF 1650 / 5217 / -40
 MIN. MAX VALUES = -53.57 71.86 , 44.44 93.63



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER HEAD ACCELERATION X AXIS

TAC 841109 15-NOV-84 15:49:06

SIDE AGGRESSIVE ATTRIBUTES

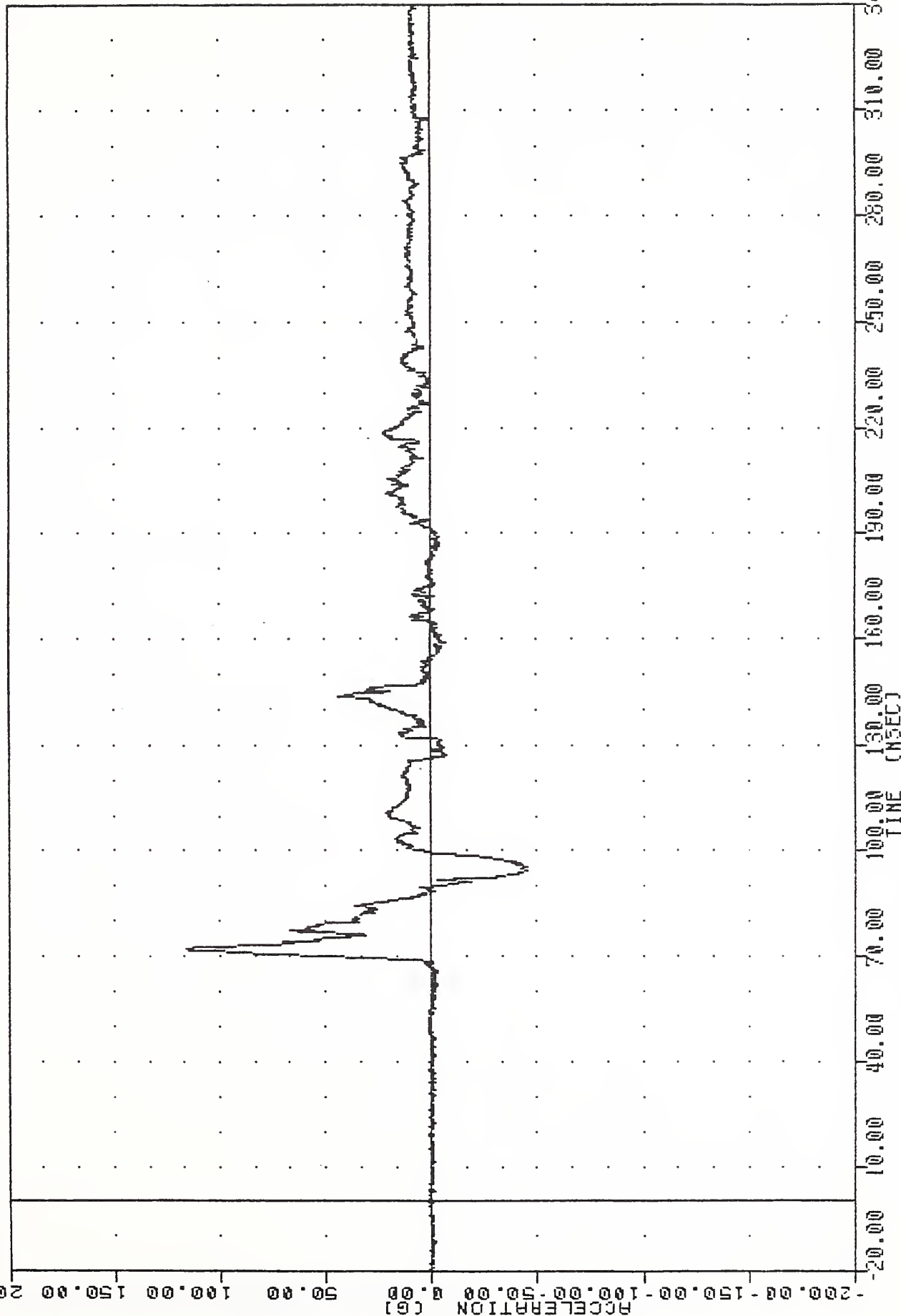
84314000000

HEDY63

FILTER = ALPF 1650/ 5217/ -40

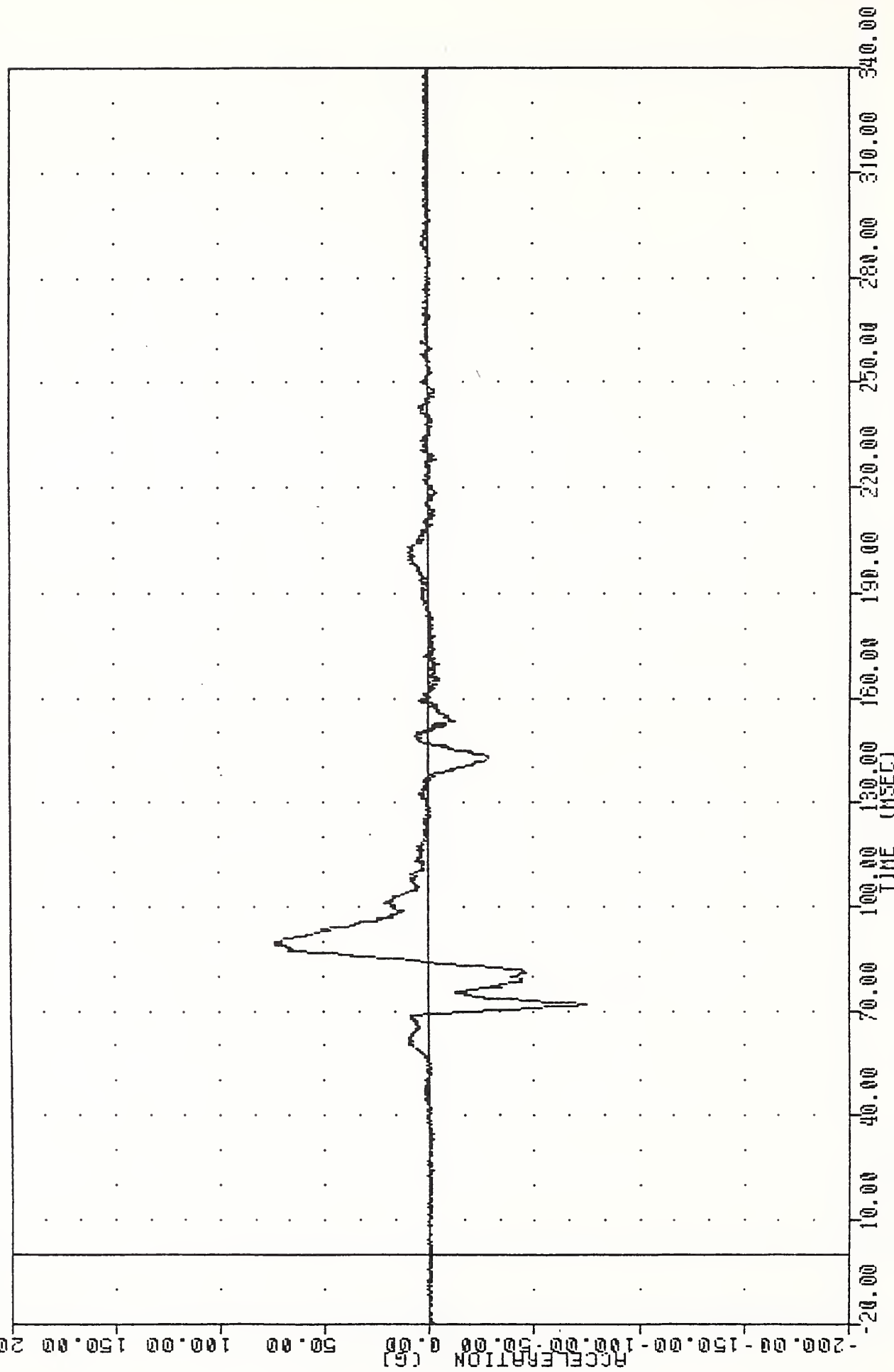
MIN. MAX VALUES = -45.54 94.13

116.10 72.13



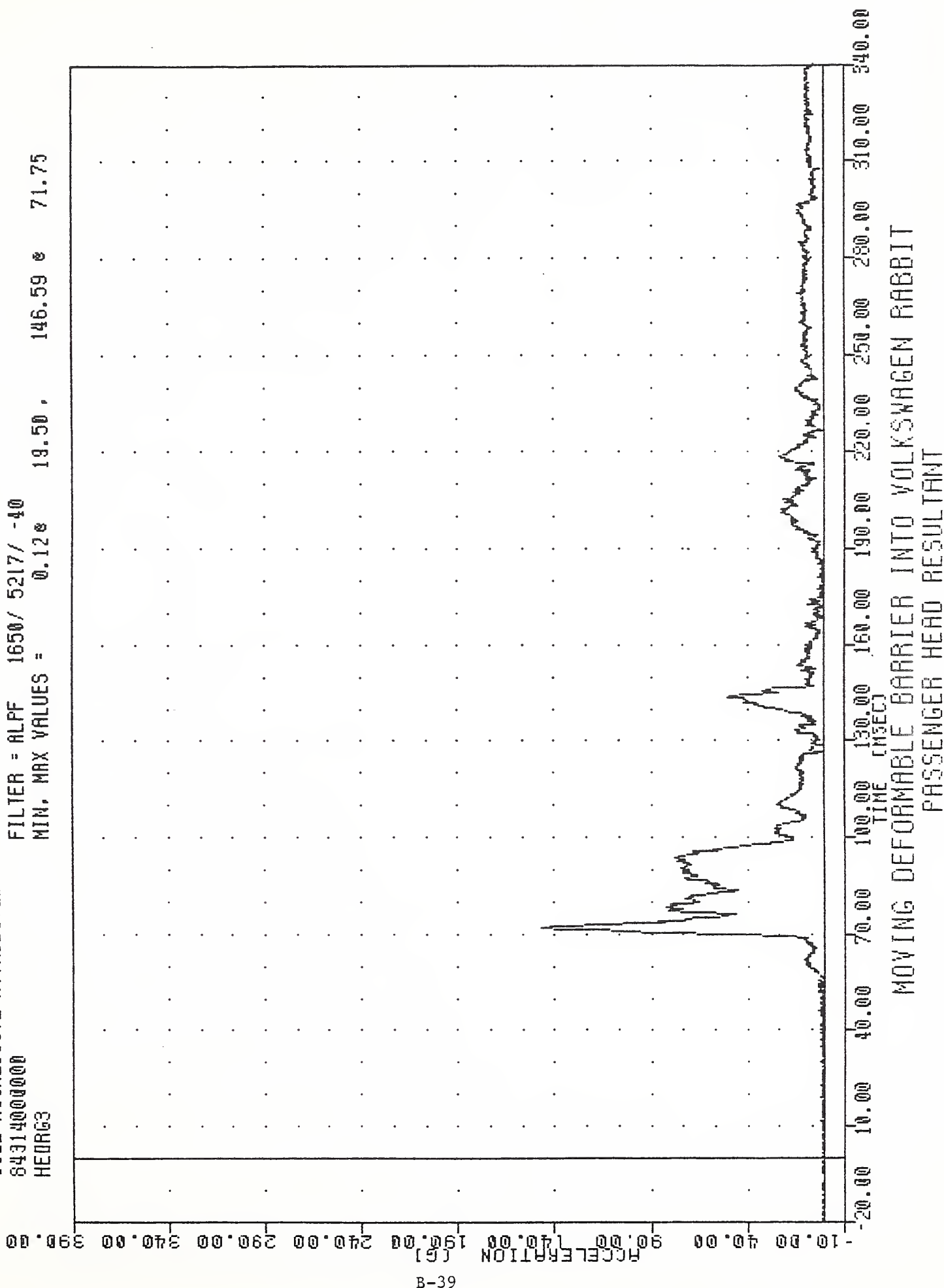
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER HEAD ACCELERATION Y AXIS

TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 HE0Z63
 PLOT DATE 15-NOV-84 15:49:06
 FILTER = ALPF 1650/ 5217/ -40
 MIN, MAX VALUES = -74.56 71.75, 73.52 89.63



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER HEAD ACCELERATION Z AXIS

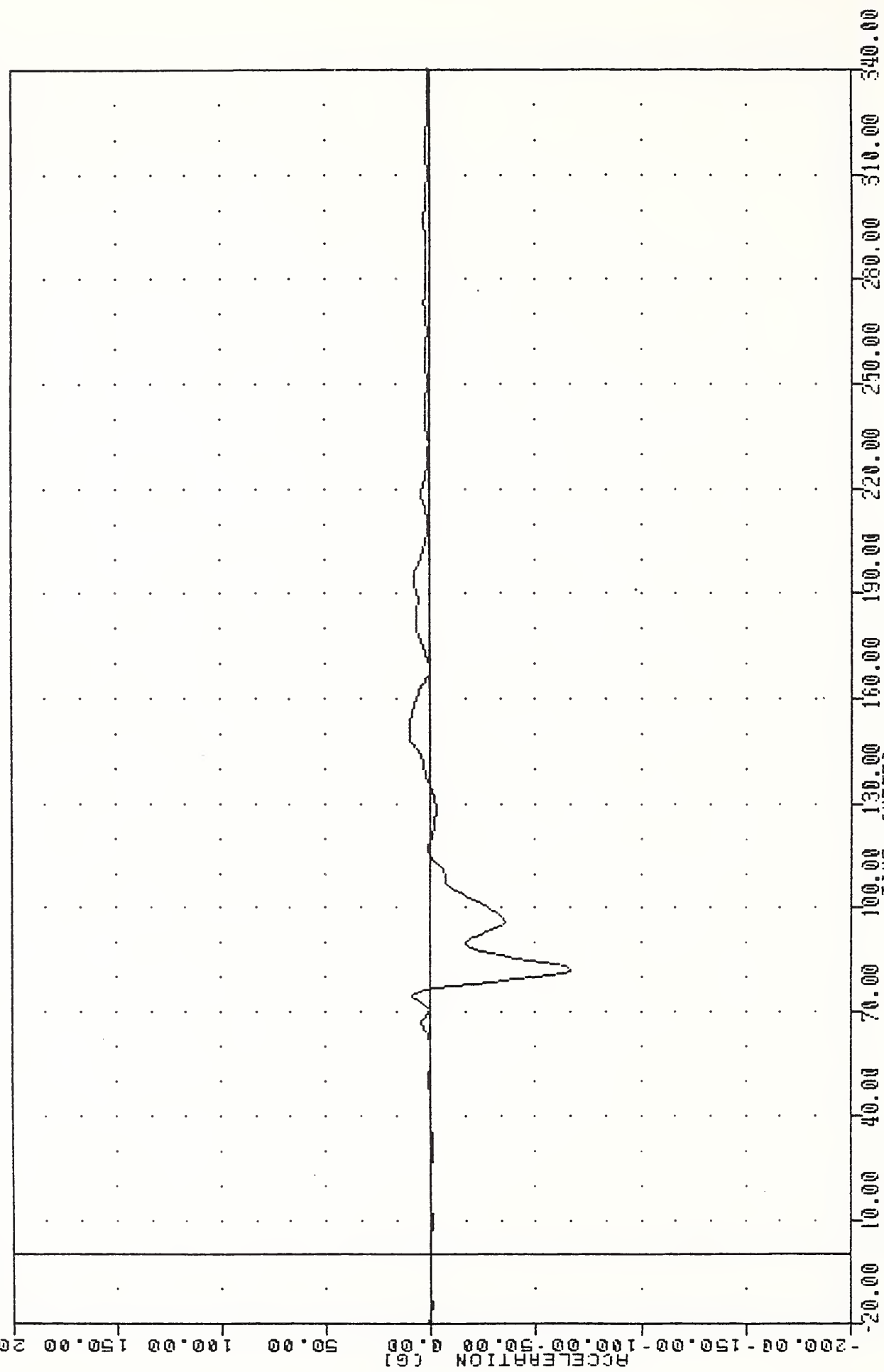
TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 HEAD03
 PLOT DATE 15-NOV-84 15:49:06
 FILTER = ALPF 1650/ 5217/ -40
 MIN. MAX VALUES = 0.128 19.50 , 146.59 71.75



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER HEAD RESULTANT

TRC 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T01X63

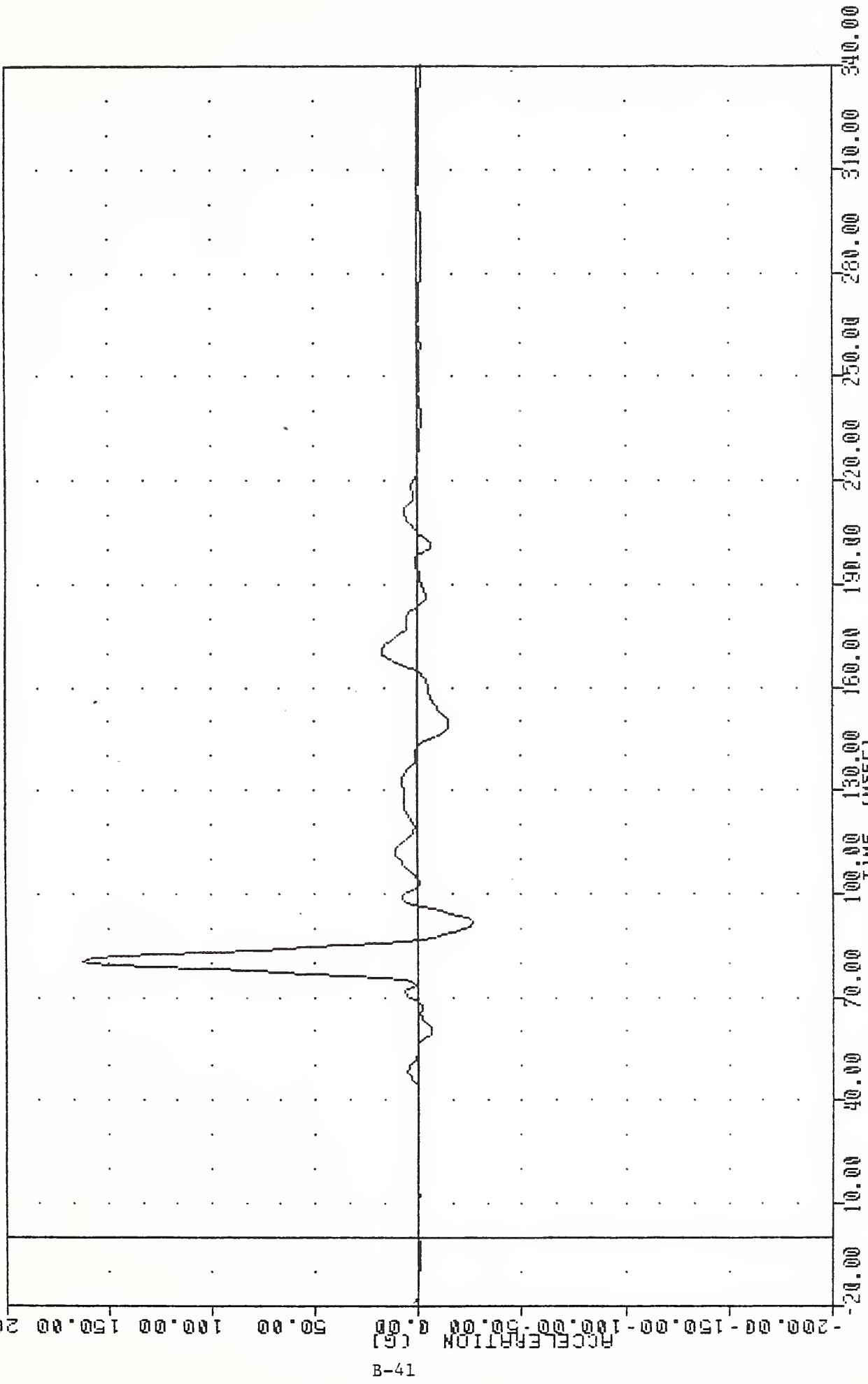
FLOI DATE 15-NOV-84 15:49:47
 FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -66.29% 81.68, 10.21 e 149.37



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER UPPER SPINE ACCELERATION X AXIS

TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 701Y63

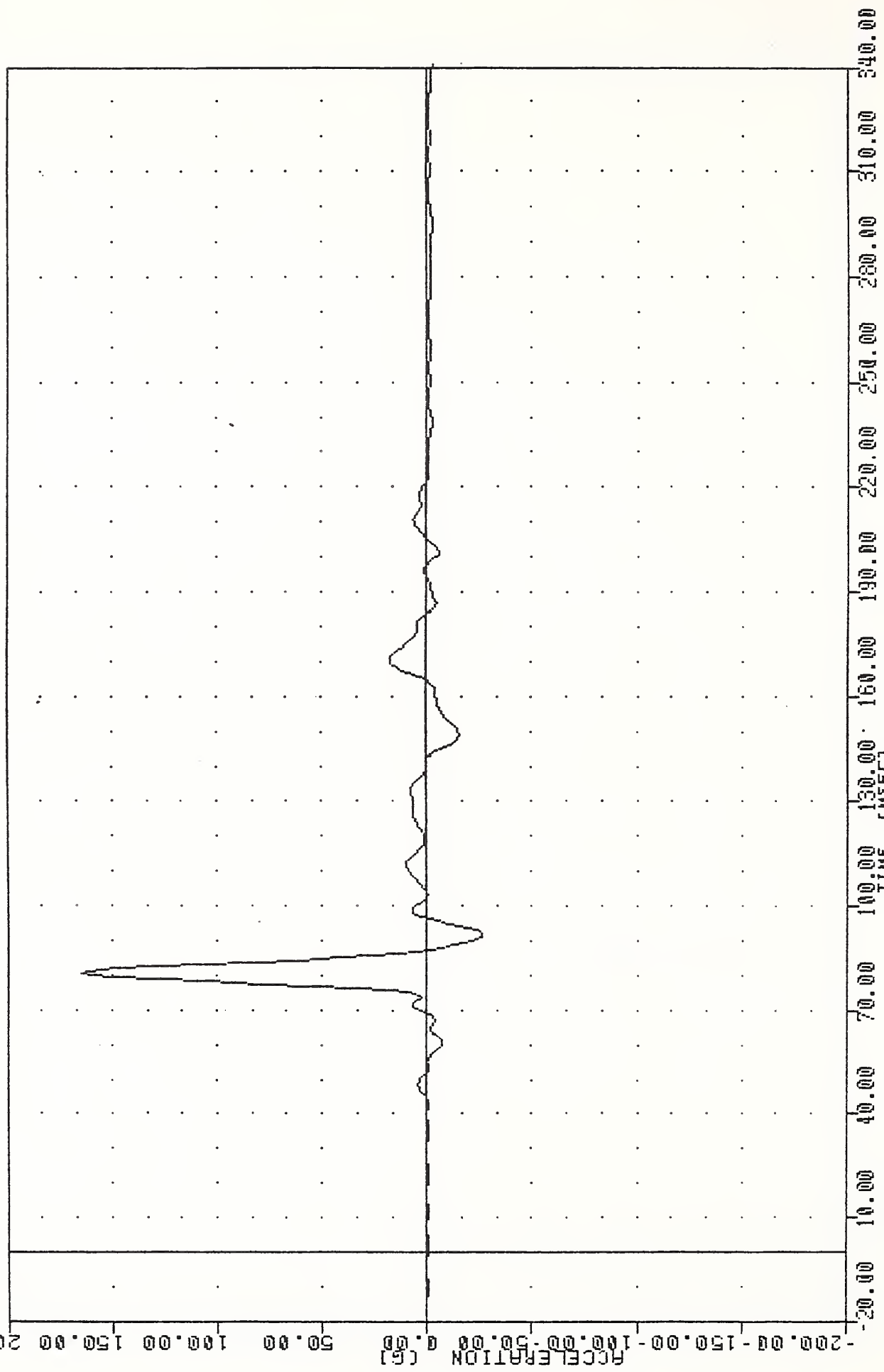
PLU1 DATE 15-NOV-84 15:49:47
 FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -26.03% 91.25, 162.97 % 80.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER UPPER SPINE ACCELERATION Y AXIS

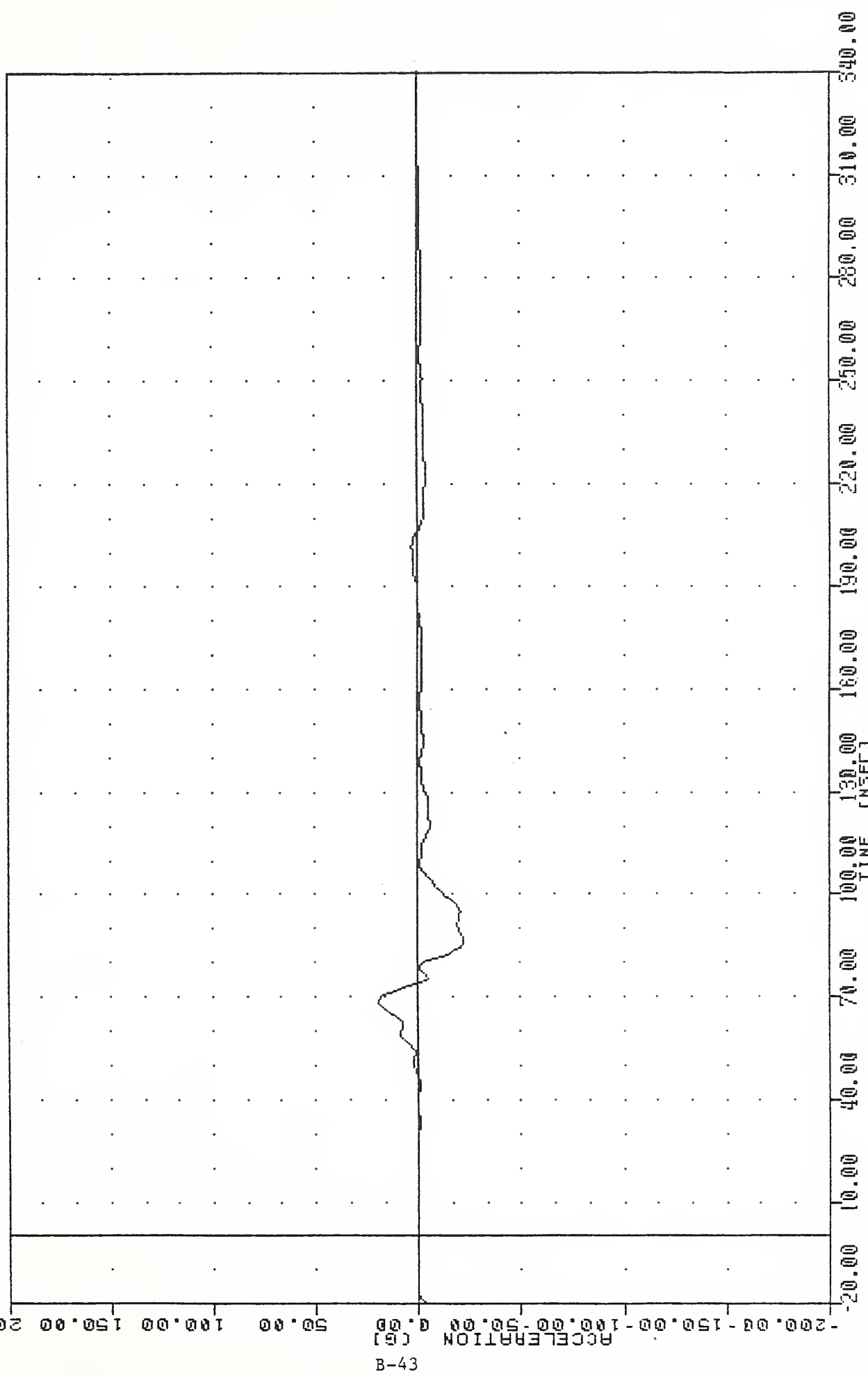
TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
T01YGC

PLOT DATE 15-NOV-84 15:49:47
FILTER = HSRI 136/ 189/ -50
MIN. MAX VALUES = -26.620 91.25, 164.99 0 80.00



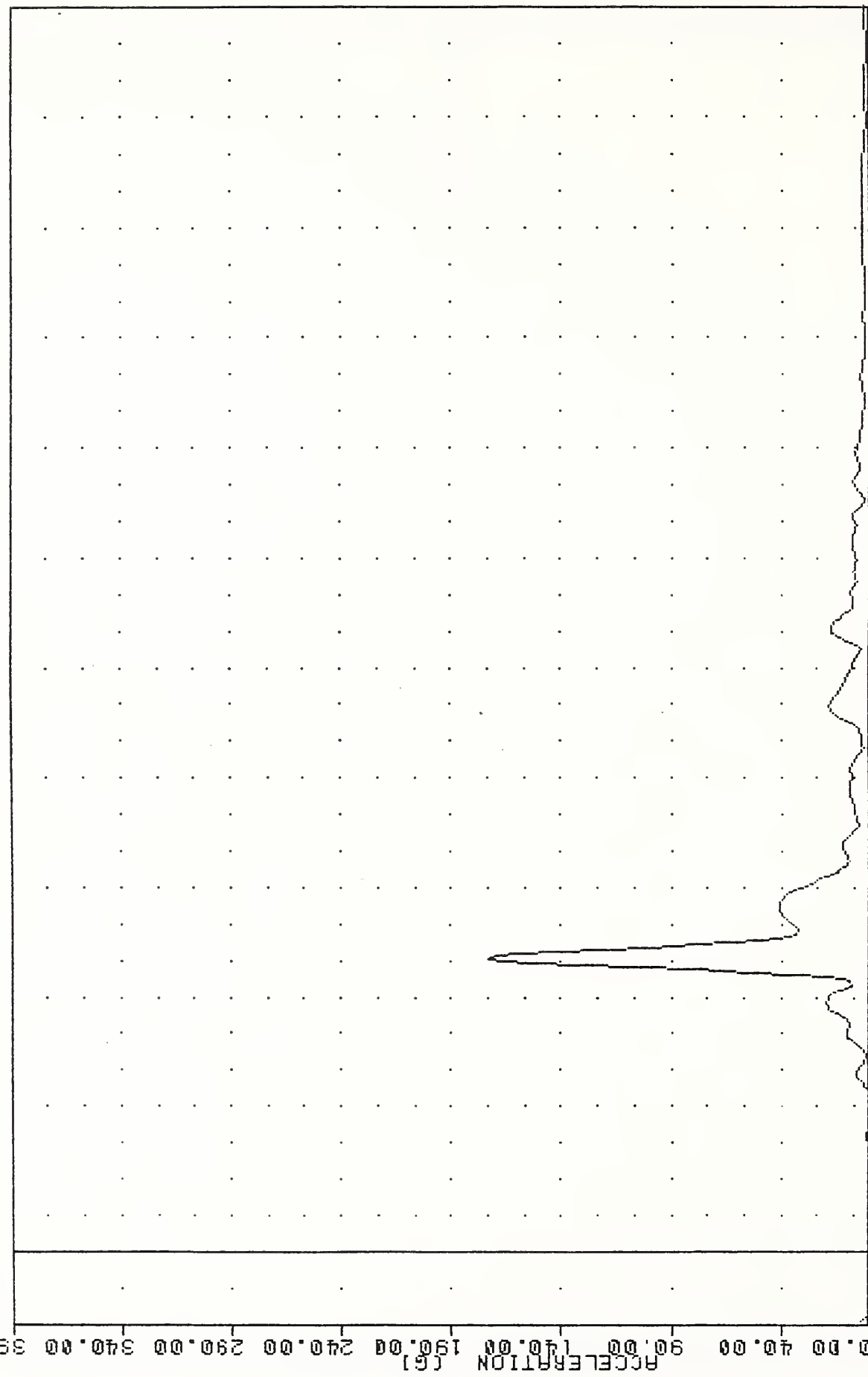
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER UPPER SPINE ACCELERATION -2 Y AXIS

TAC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T01763
 PLOT DATE 15-NOV-84 15:49:47
 FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -22.13 85.63 18.98 68.13



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER UPPER SPINE ACCELERATION Z AXIS

TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
T01RG3
PLU1 DATE 15-NOV-84 15:49:47
FILTER = HSRI 136/ 189/ -50
MIN. MAX VALUES = 0.028 4.38 , 172.80 8 80.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER UPPER SPINE RESULTANT

THU , 84J109 PLOT DATE 15-NOV-84 15:50:45

SIDE AGGRESSIVE ATTRIBUTES

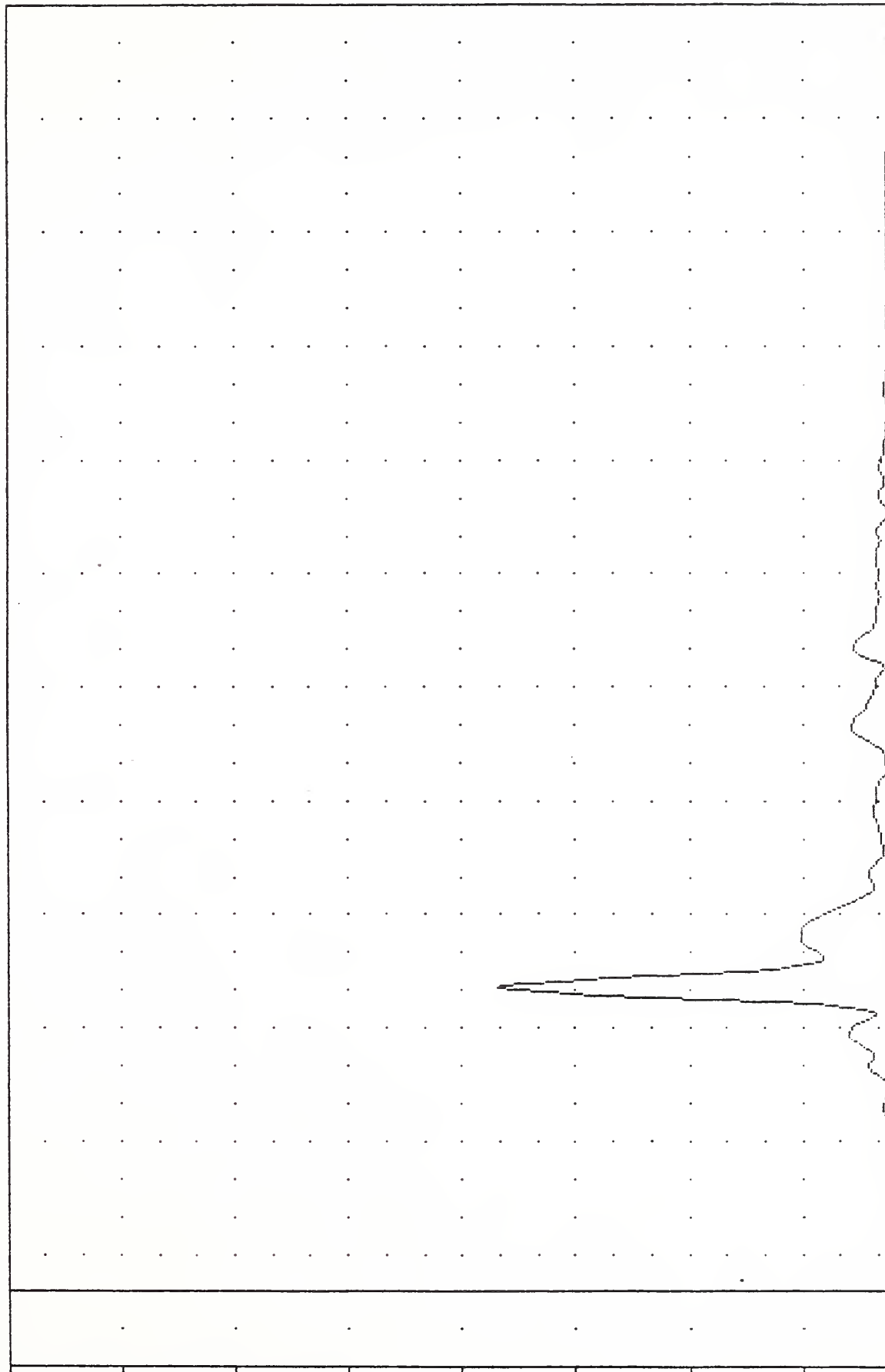
84314000000

T01RBC

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = 0.130 15.00 174.71 80.00

ACCELERATION (G)

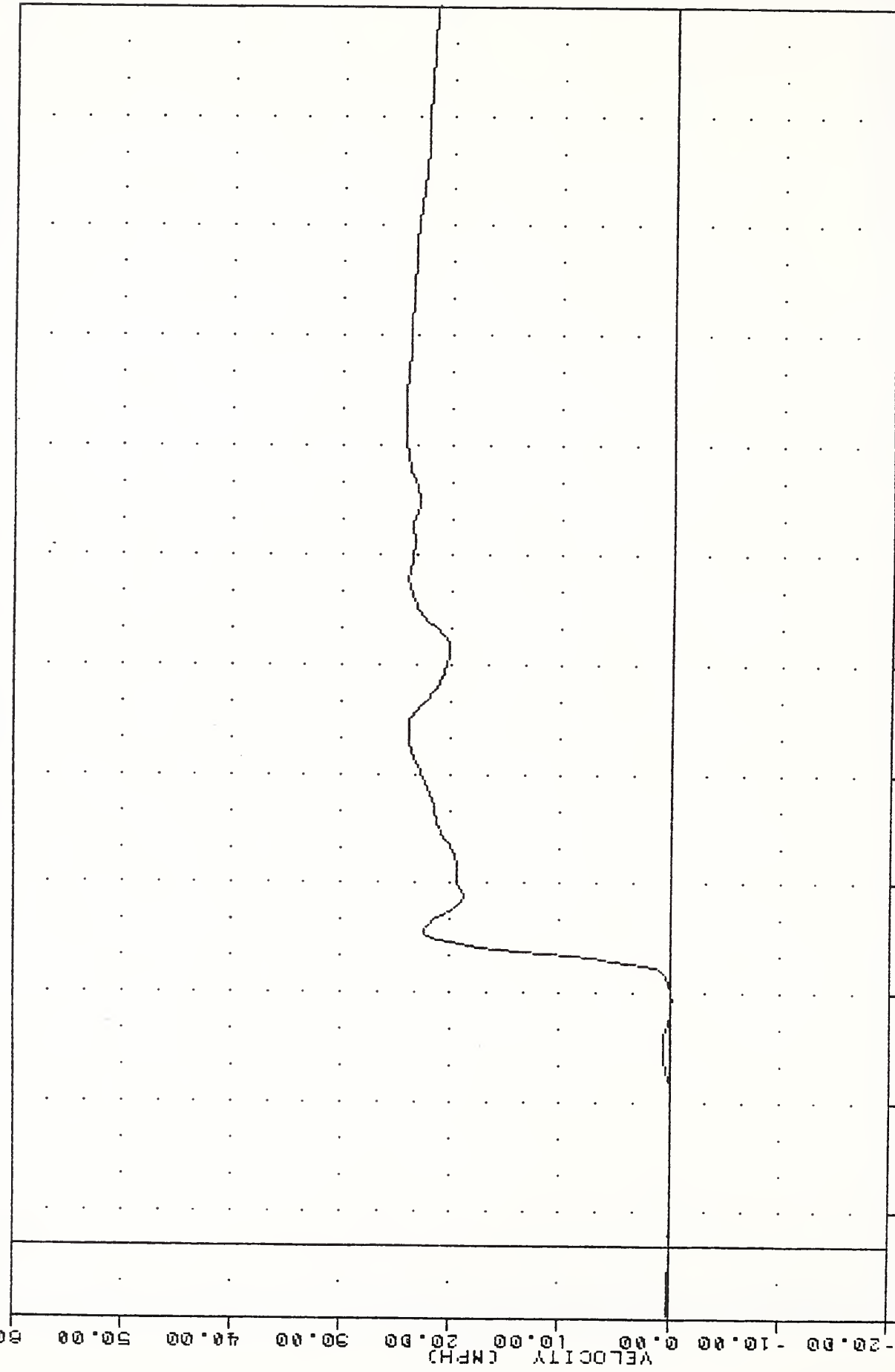


B-45

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER UPPER SPINE RESULTANT USING T01YGC

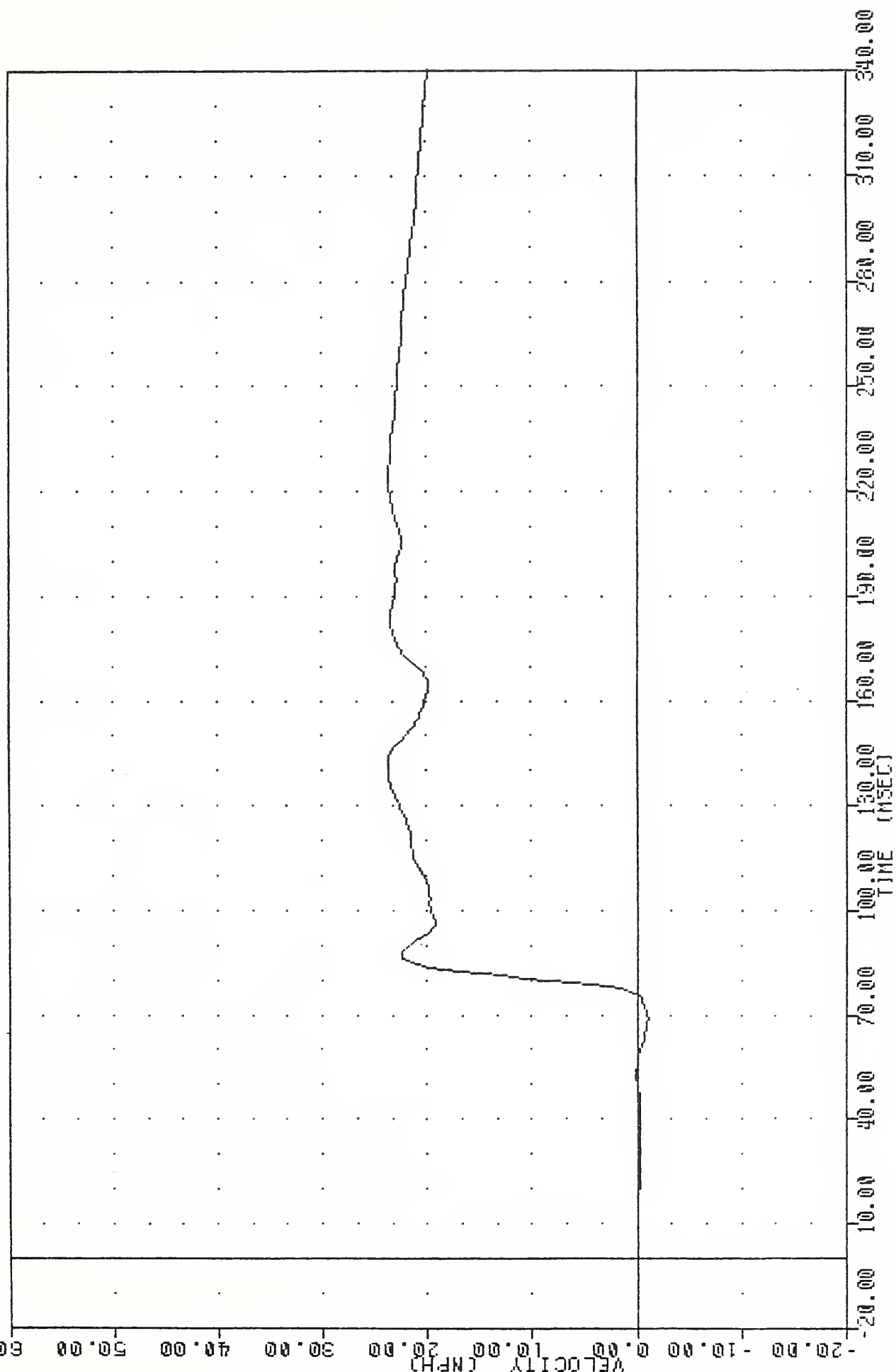
TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T01YV3

PL01 DATE 15-NOV-84 15:01:03
 FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -0.228 68.13, 24.33 226.87



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING T01Y63

TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T01YVC
 FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = -1.07% 23.65% 141.86
 PLOT DATE 15-MAY-84 13:31:05



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING T01YGC

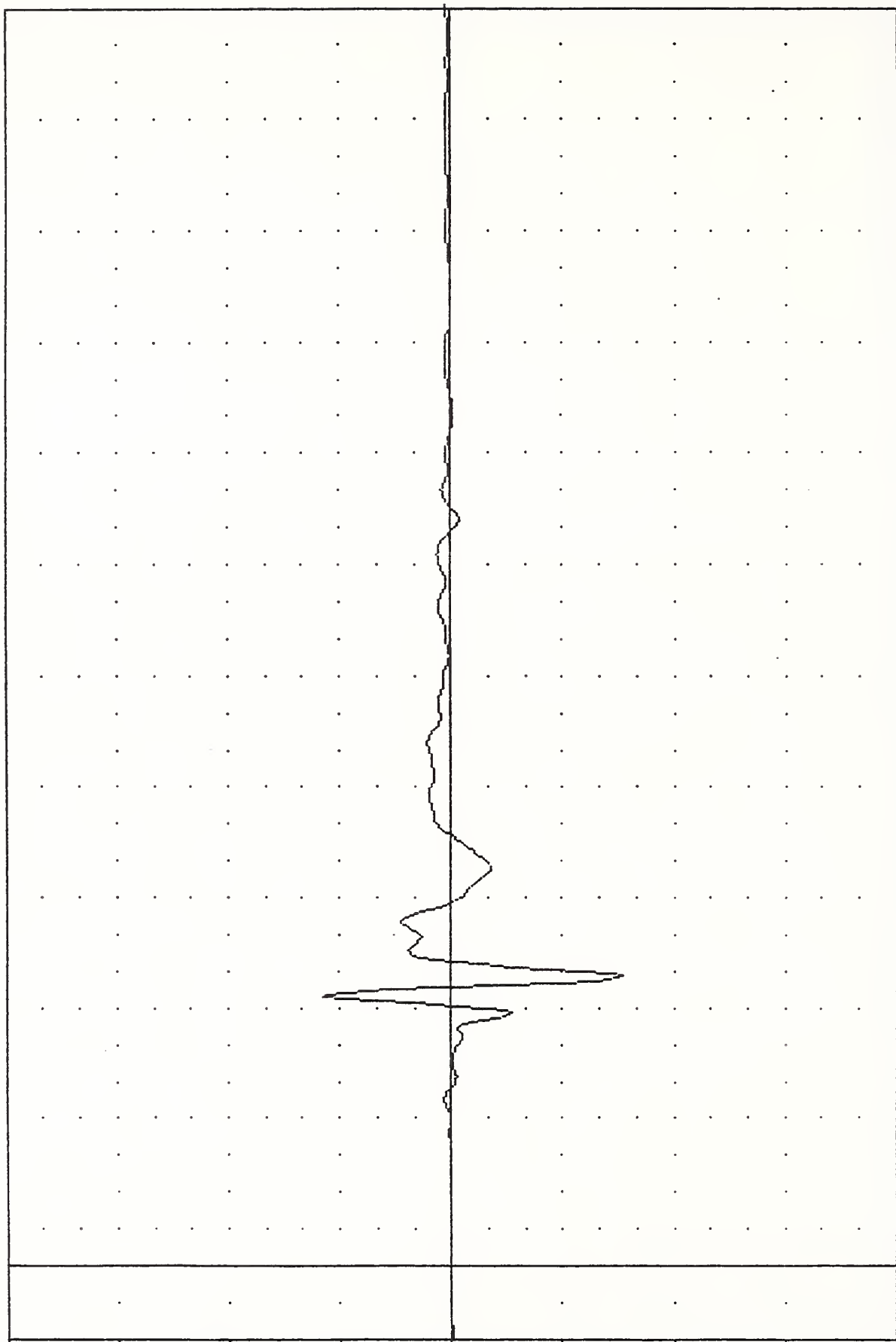
TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T12XG3

PLU1 DATE 15-NOV-84 15:49:47

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -76.75% 78.13, 57.44 % 72.50

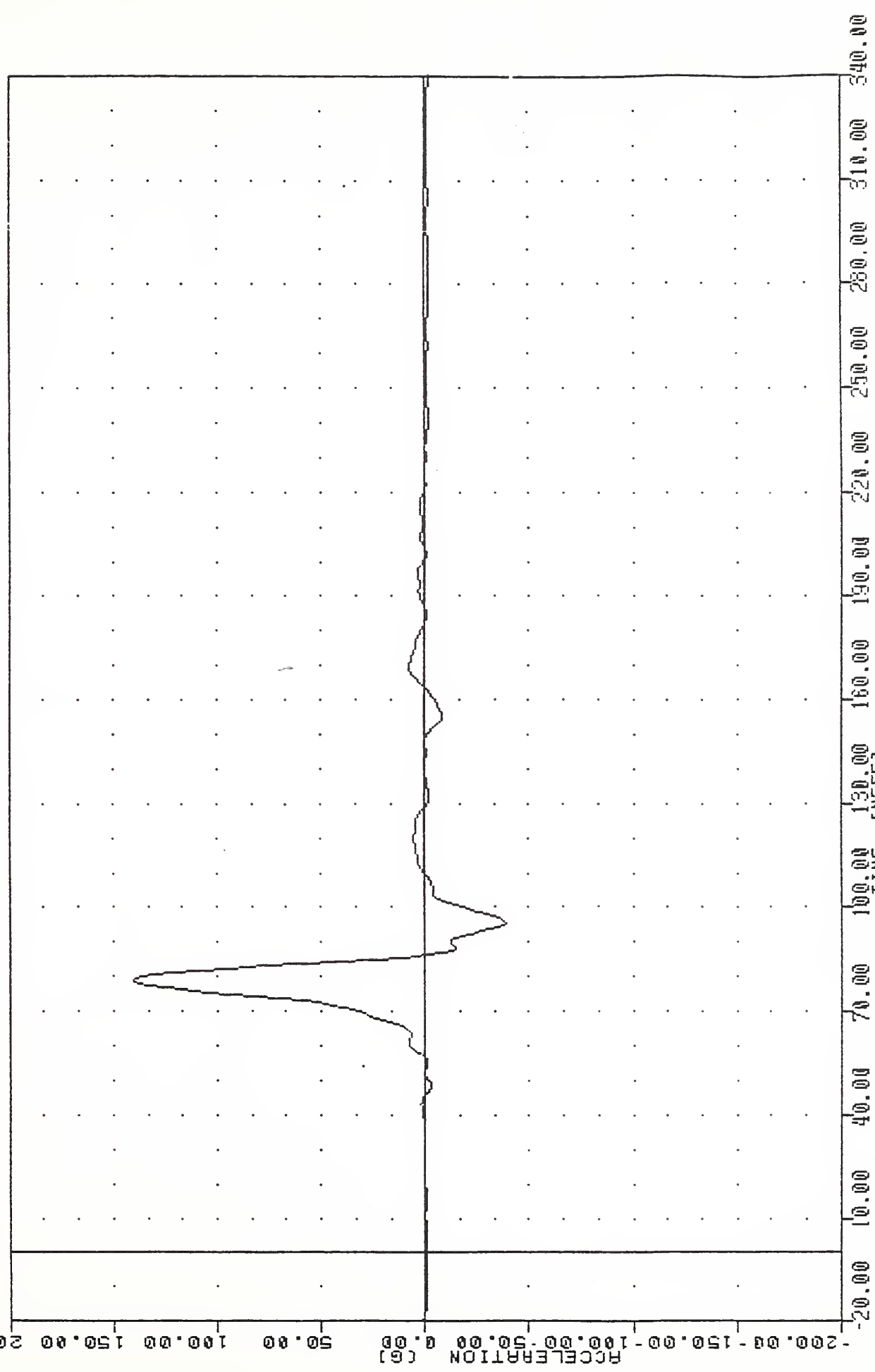
ACCELERATION (G)



-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00
 TIME (MSEC)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER LOWER SPINE ACCELERATION X AXIS

TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T12Y63
 PL01 DATE 15-NOV-84 15:49:47
 FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = -38.858 95.00 140.01 76.13



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER LOWER SPINE ACCELERATION Y AXIS

TRC 841109 PLU1 DATE 15-MAY-84 15:49:47

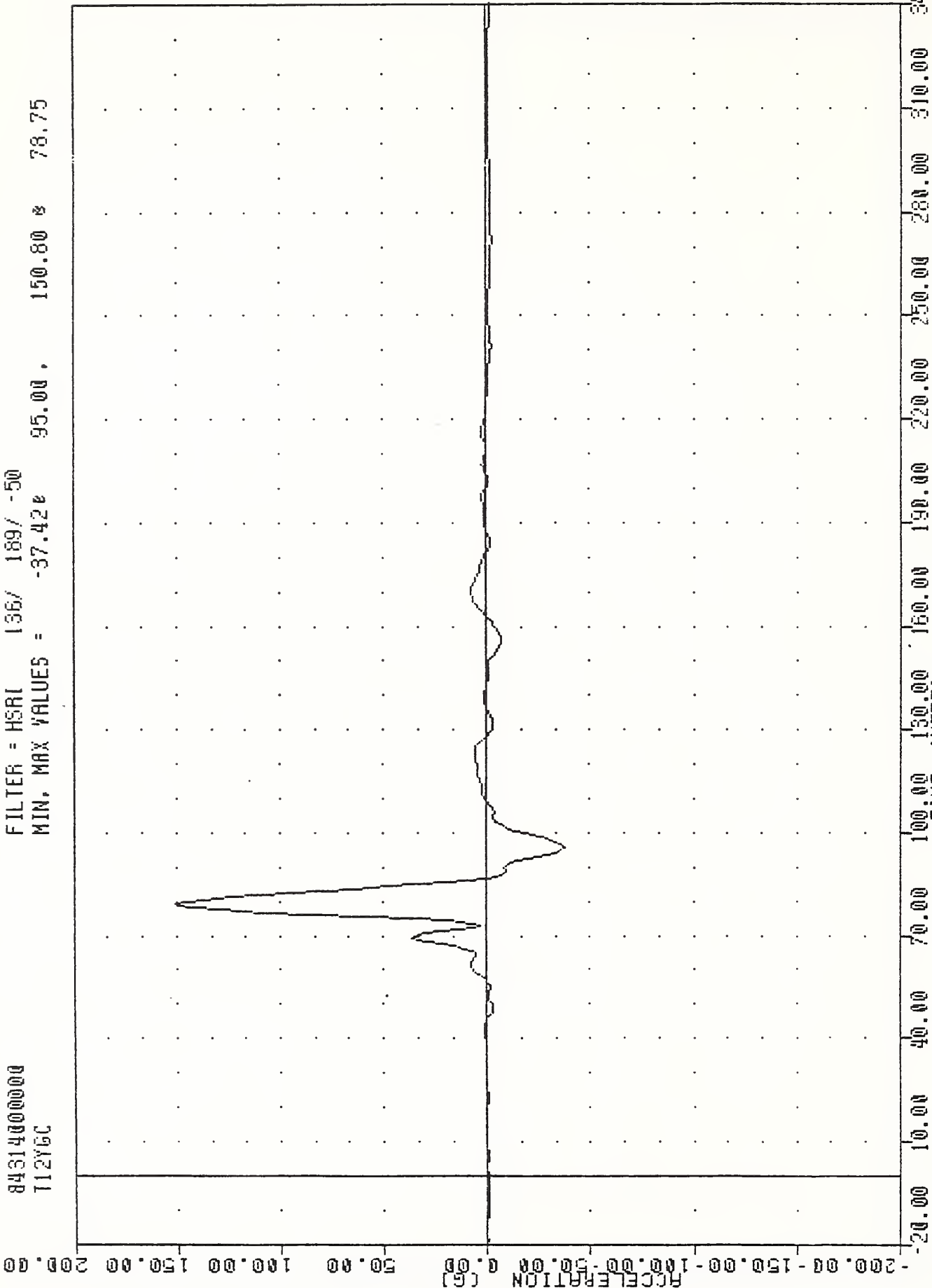
SIDE AGGRESSIVE ATTRIBUTES

84314000000

712Y6C

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -37.420 95.00, 150.80 * 78.75



B-50

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER LOWER SPINE ACCELERATION #2 Y AXIS

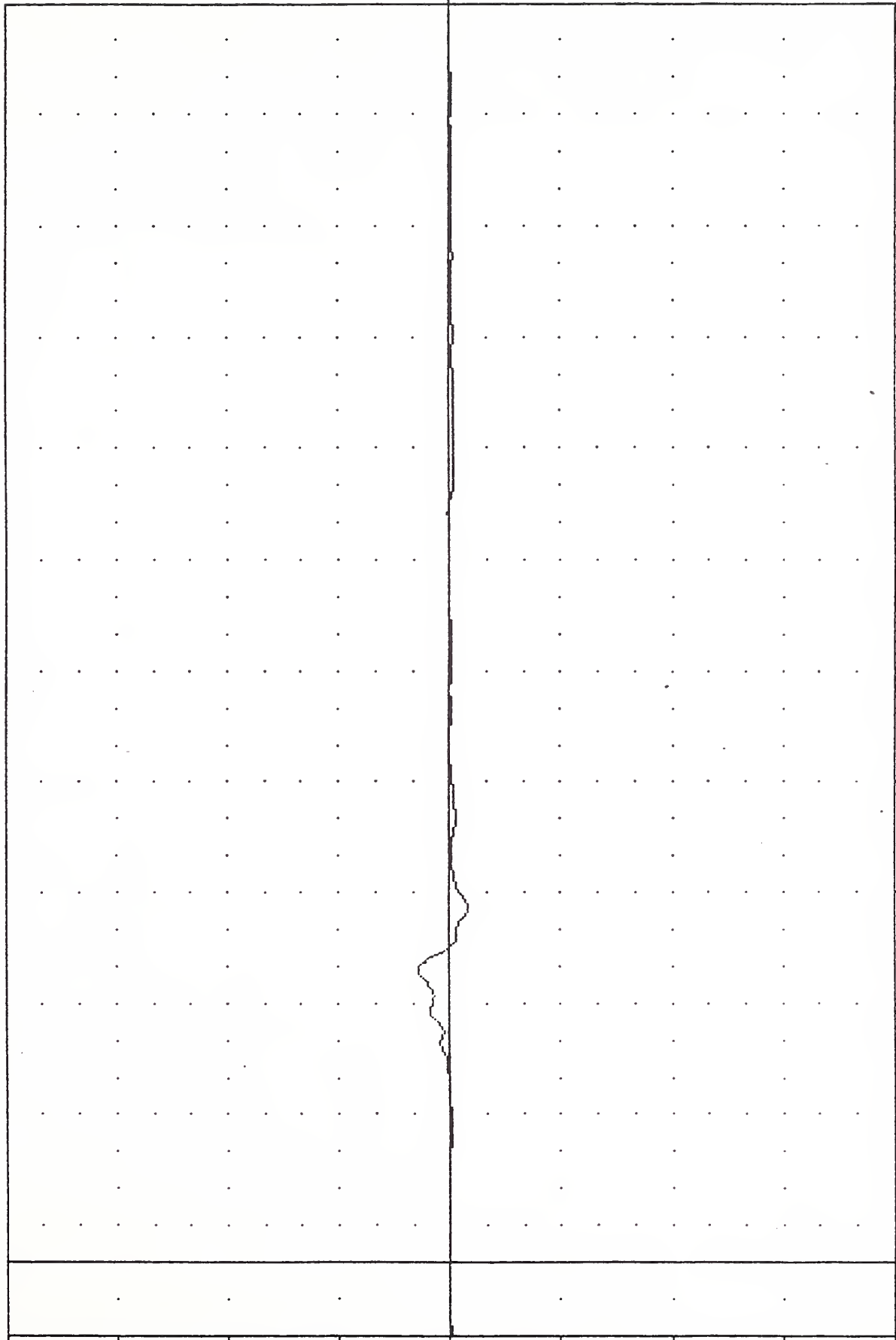
TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
T12763

PL01 DATE 15-NOV-84 15:49:47

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -8.26 95.00 14.03 78.13

ACCELERATION (G)



B-51

-200.00 -150.00 -100.00 -50.00 0.00 50.00 100.00 150.00 200.00

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER LOWER SPINE ACCELERATION Z AXIS

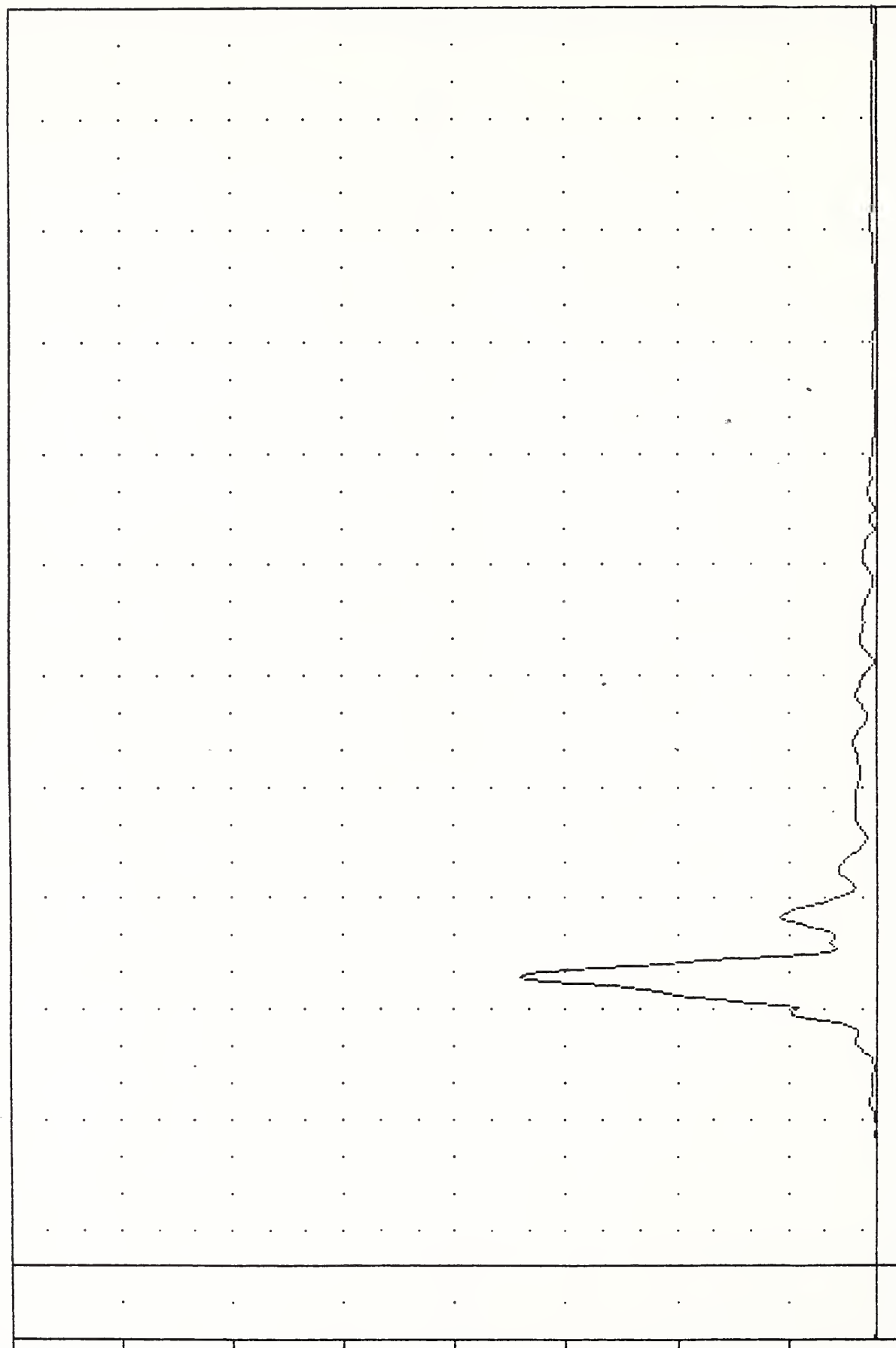
TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
T12R63

PL01 DATE 15-MAY-84 15:49:47

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = 0.13 19.38 160.29 78.13

ACCELERATION (G)



20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER LOWER SPINE RESULTANT

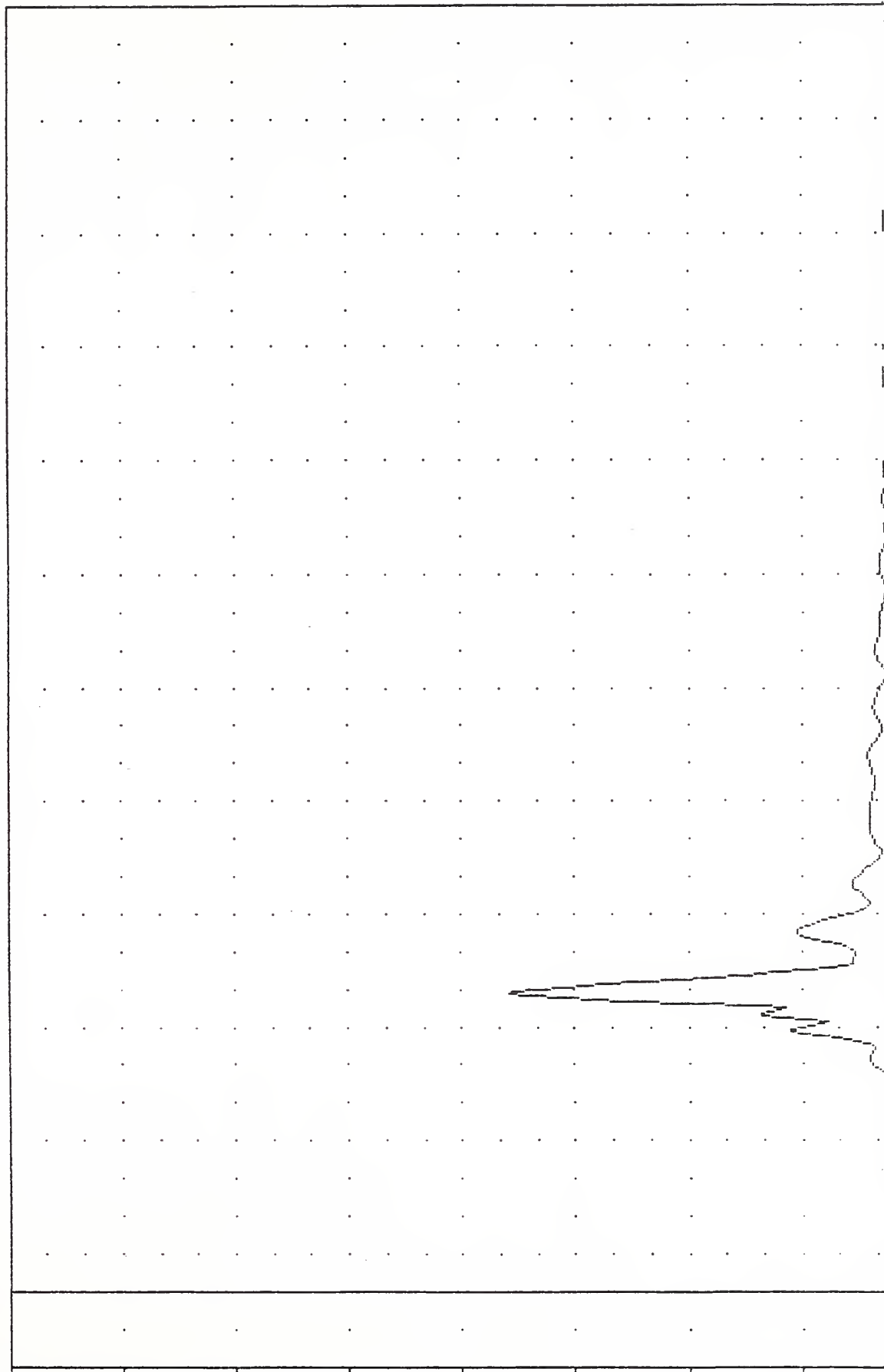
TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
T12RGC

PLU1 DATE 15-NOV-84 15:50:45

FILTER = HSR1 136/ 189/ -50

MIN. MAX VALUES = 0.08e 25.63, 169.22 * 78.13

ACCELERATION (G)

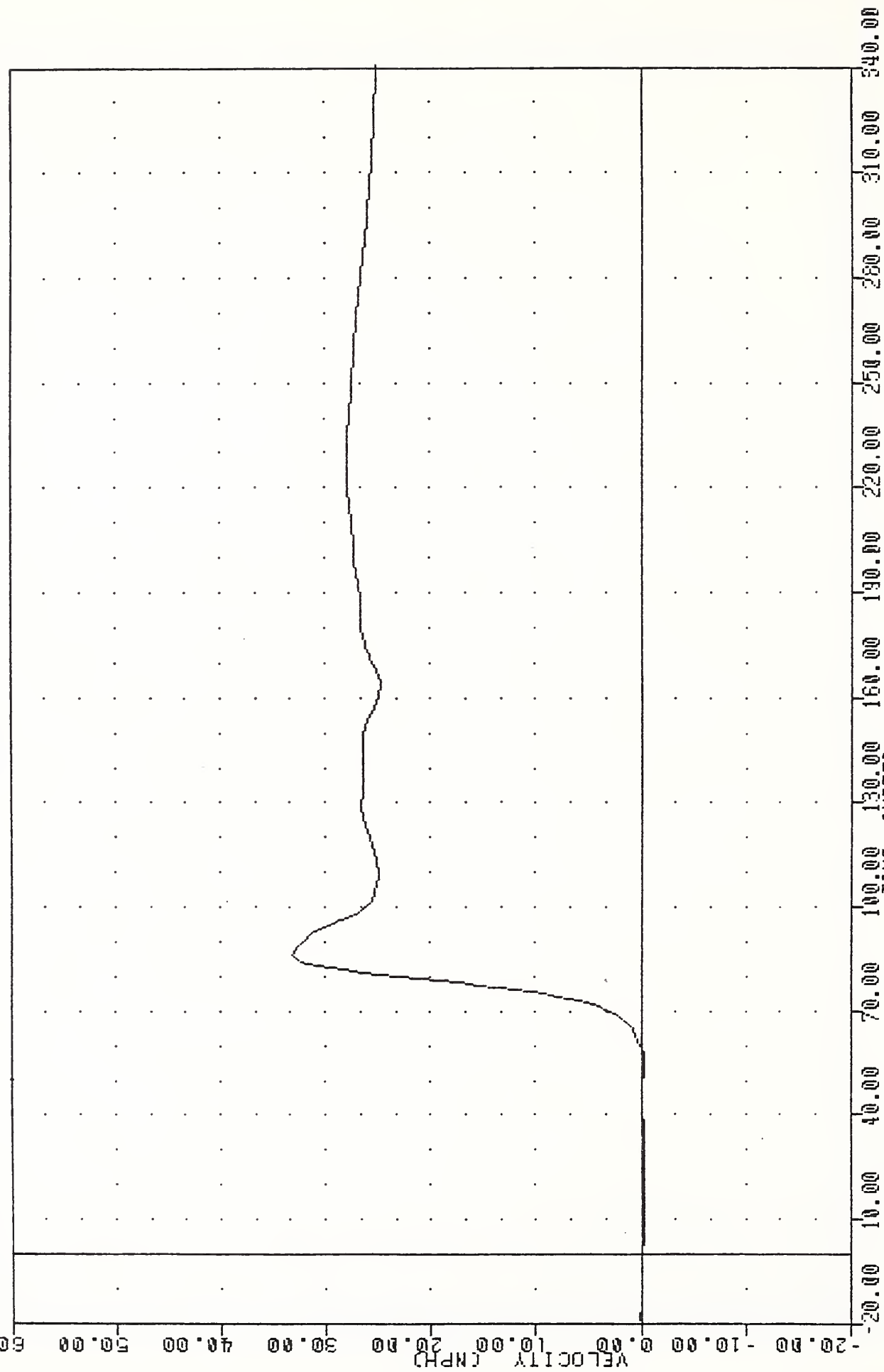


-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER LOWER SPINE RESULTANT USING T12YGC

TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
T12YV3

PLU1 DATE 15-NOV-84 15:51:03
FILTER = HSRI 136/ 189/ -50
MIN. MAX VALUES = -0.36 19.36 , 33.13 85.63



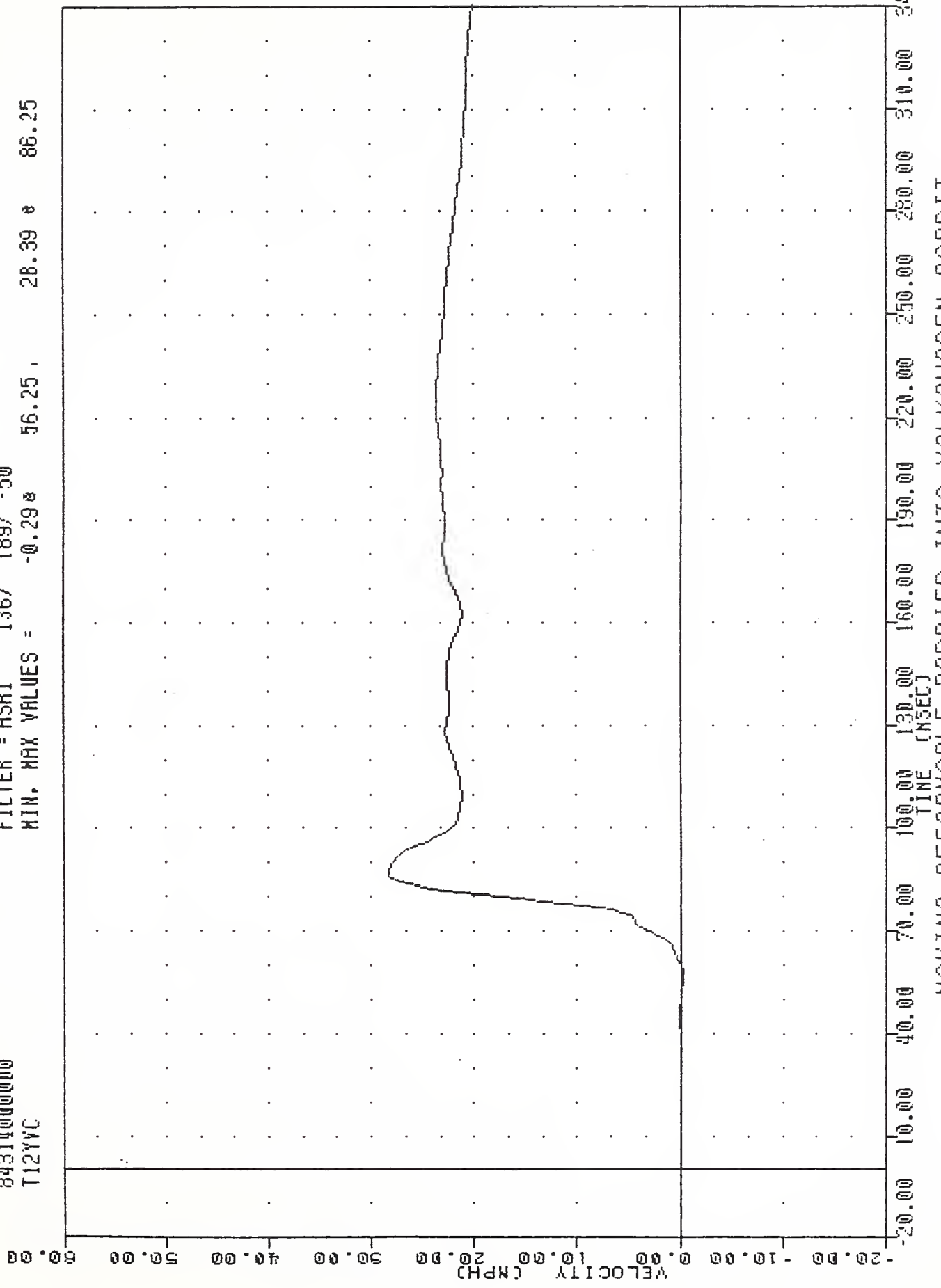
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING T12Y63

TRC , 841109 PLOT DATE 15-NOV-84 15:51:03

SIDE AGGRESSIVE ATTRIBUTES

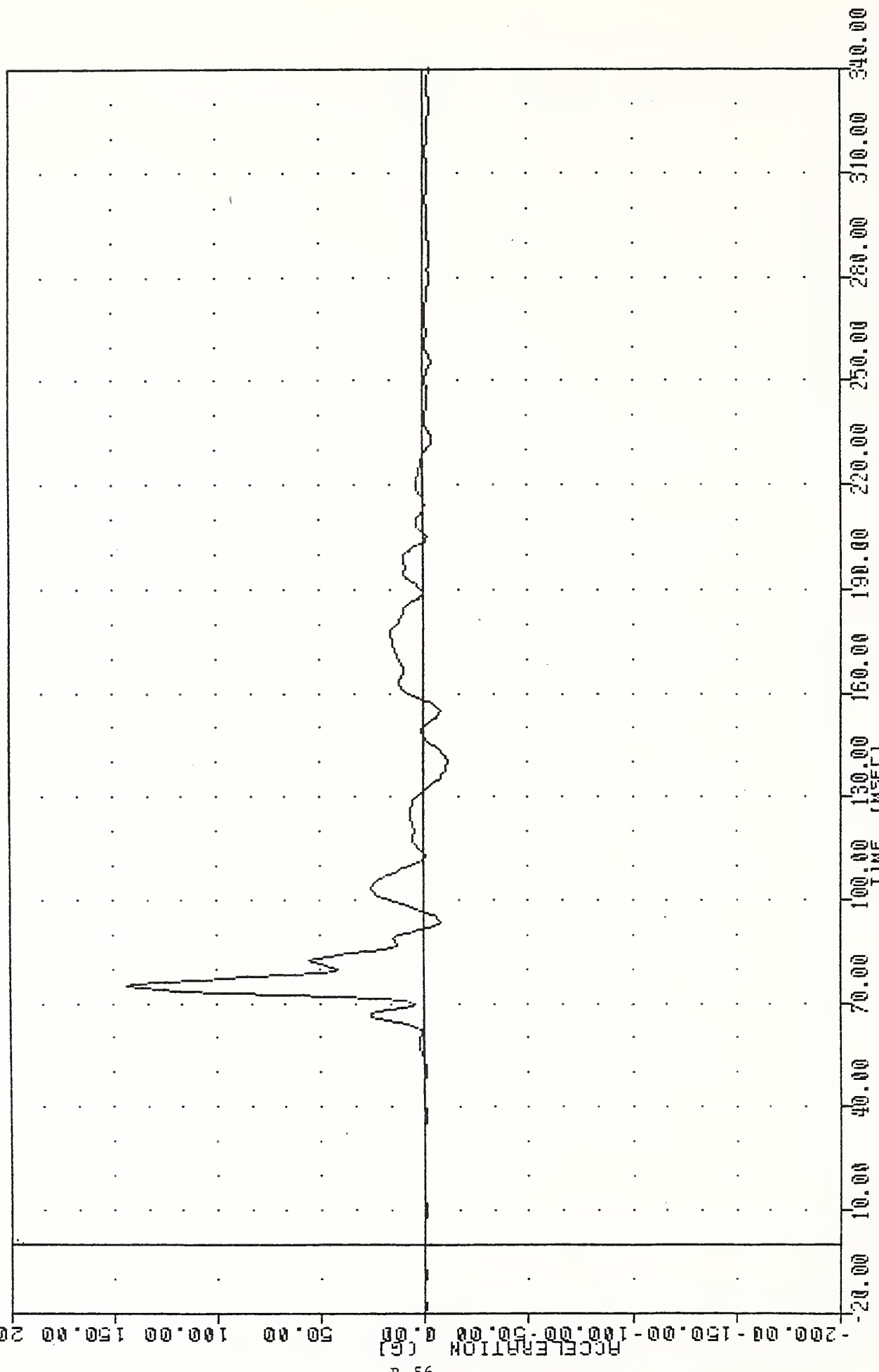
84314000000 FILTER = HSRI 136/ 189/ -50

T12YVC MIN. MAX VALUES = -0.29 56.25 28.39 86.25



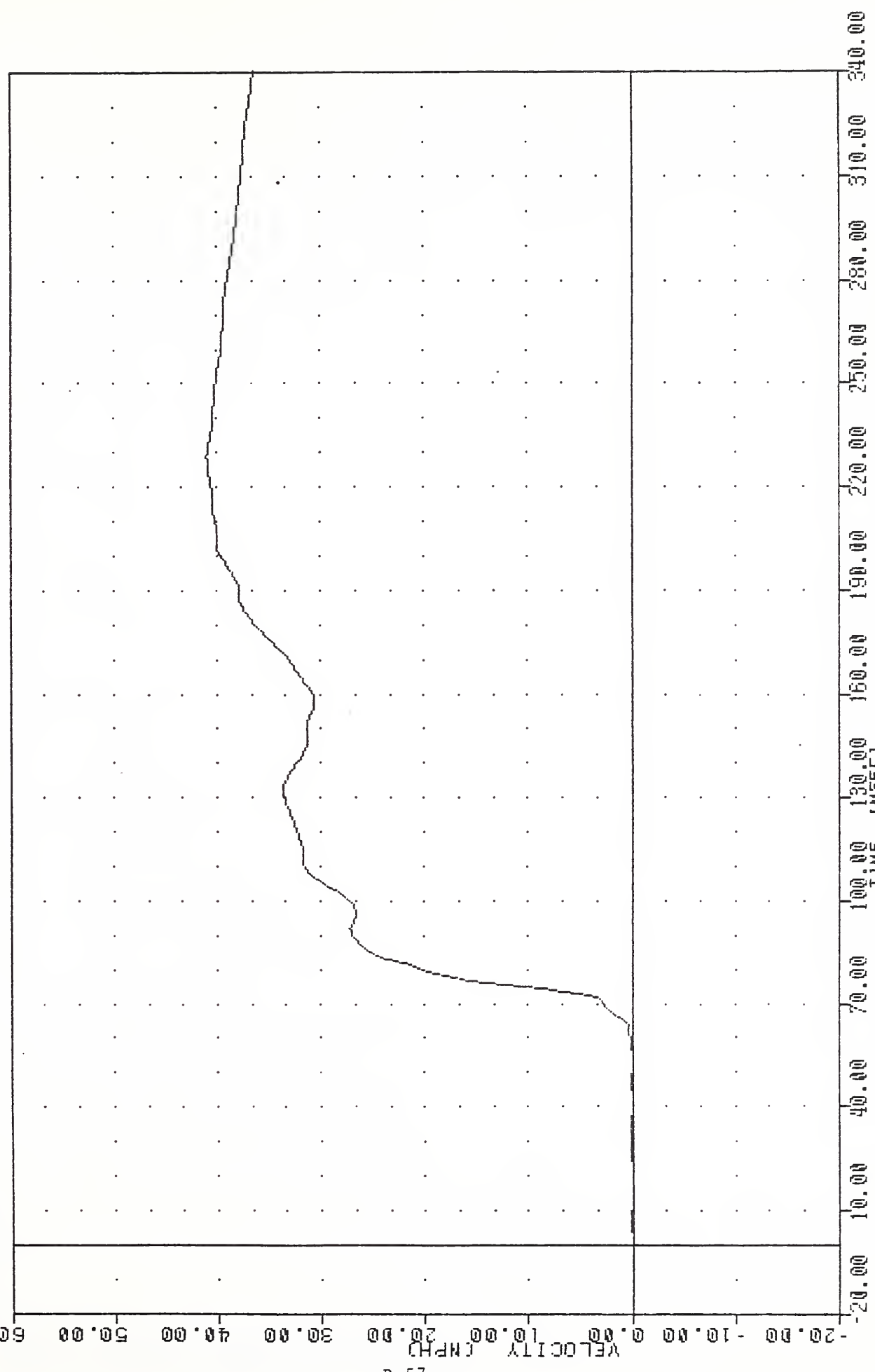
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING T12YVC

TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 LURY63
 PLU1 DATE 15-NOV-84 15:49:47
 FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -11.03e 139.38 ; 143.43 e 74.37



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER LEFT UPPER RIB ACCELERATION Y AXIS

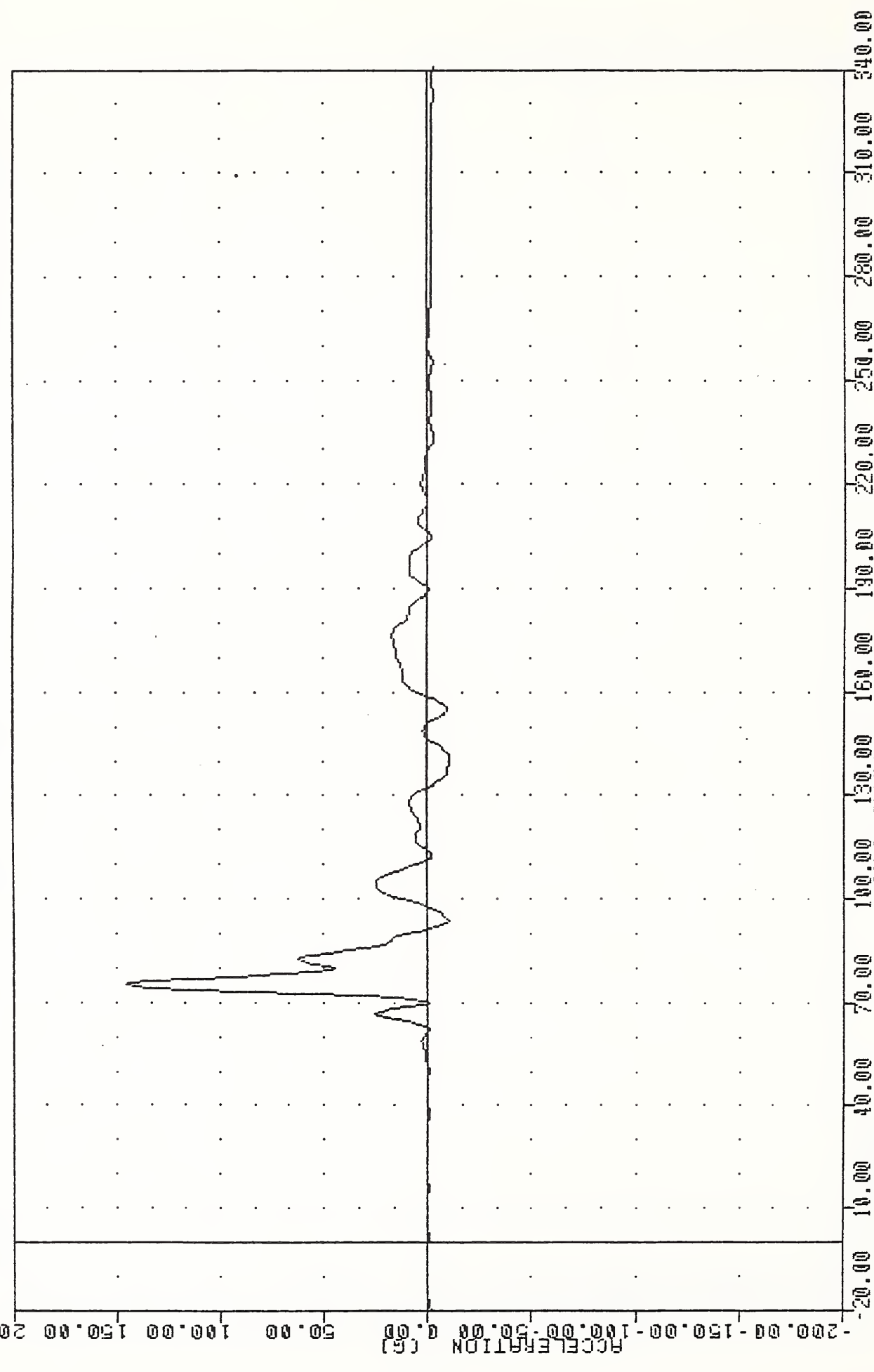
TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 LURYV3
 PLU1 DATE 15-NOV-84 15:51:03
 FILTER = HSR1 136/ 189/ -50
 MIN. MAX VALUES = -0.098 -6.25 , 40.95 228.12



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING LURY63

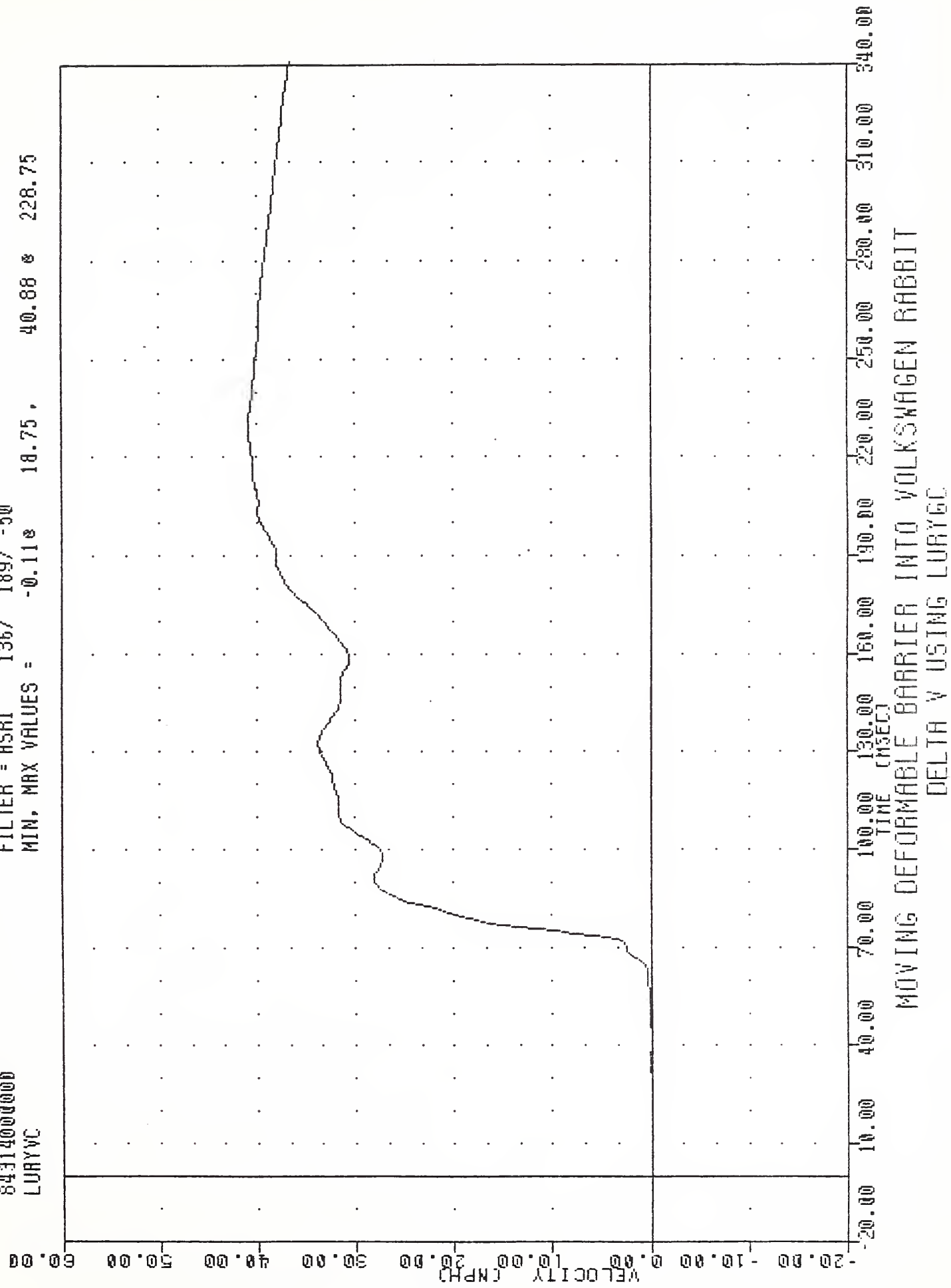
TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LURYGC

PLOT DATE 15-NOV-84 15:49:47
FILTER = HSRI 136/ 189/ -50
MIN, MAX VALUES = -10.778 140.63, 145.06 e 74.37



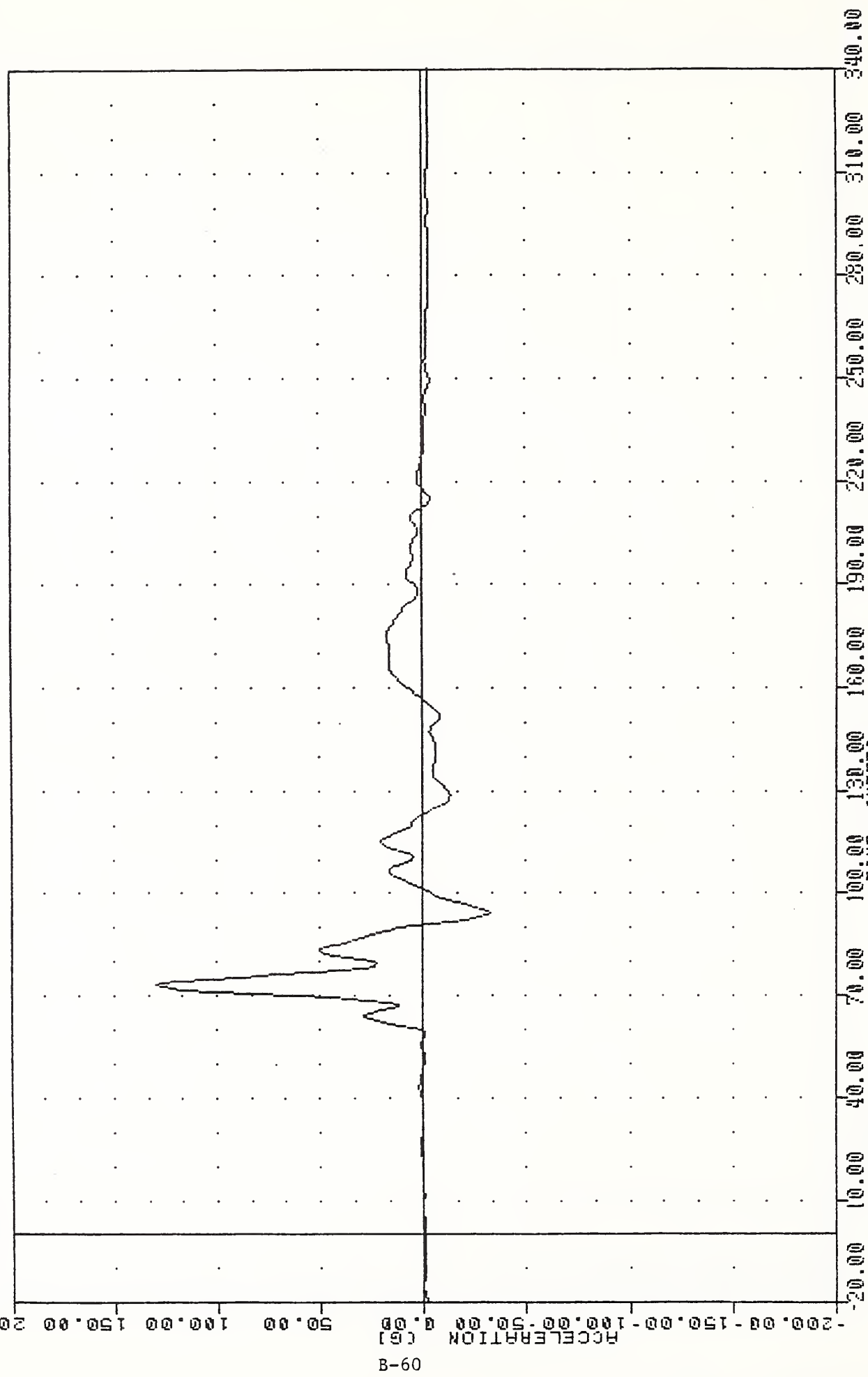
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER LEFT UPPER RIB ACCELERATION -2 Y AXIS

TRC , 841103
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 LURYVC
 PLOT DATE 15-NOV-84 15:51:03
 FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = -0.11e 18.75, 40.88 e 228.75



TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 LLRY63

PLOI DATE 15-NOV-84 15:43:47
 FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = -32.16 93.75 , 129.99 72.50



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER LEFT LOWER RIB ACCELERATION Y AXIS

TRC , 841109 PL01 DATE 15-NOV-84 15:49:47

SIDE AGGRESSIVE ATTRIBUTES

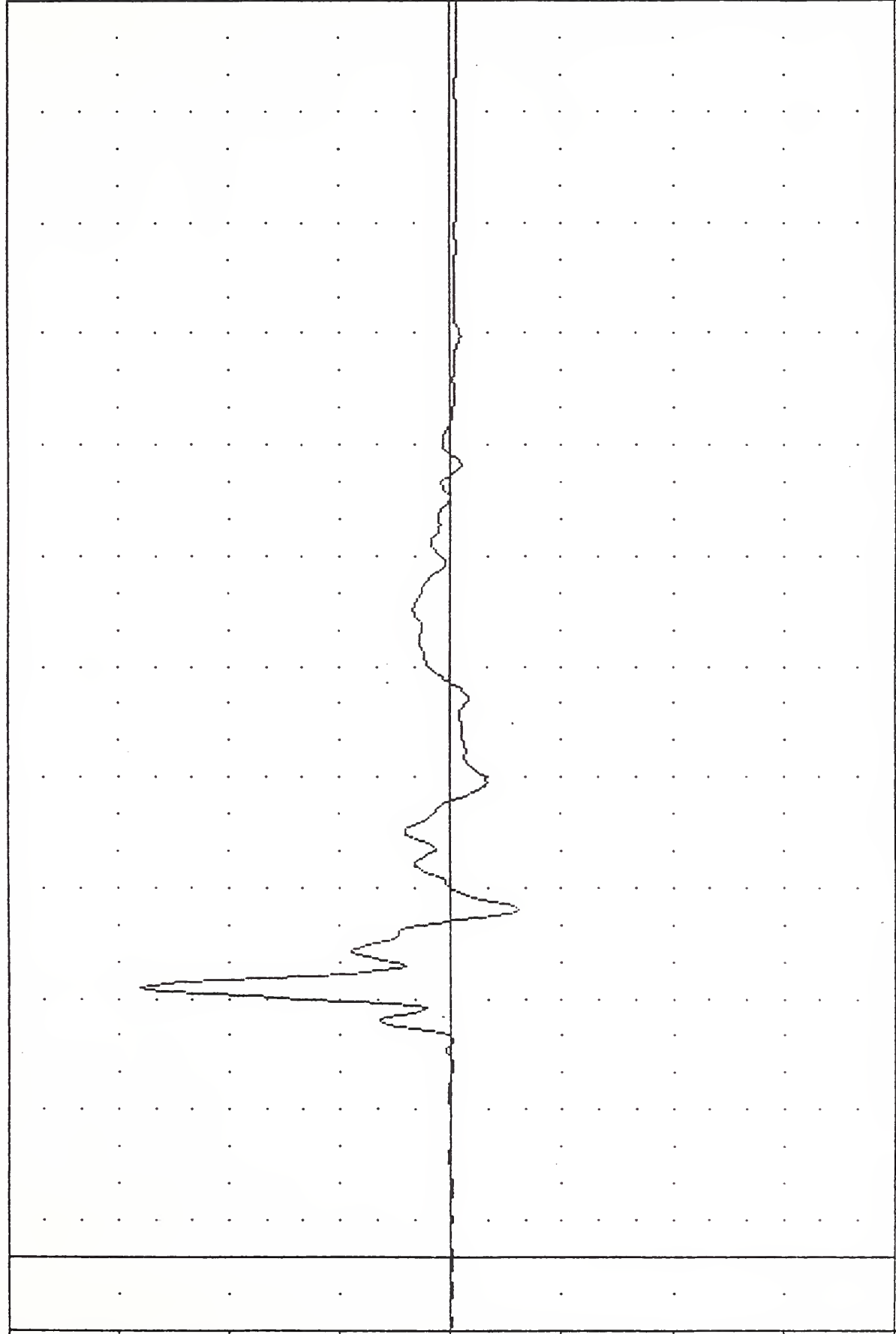
843140000000

LLRYGC

FILTER = HSR1 136/ 189/ -50

MIN. MAX VALUES = -30.238 93.75, 140.18 72.50

ACCELERATION (G)



B-61

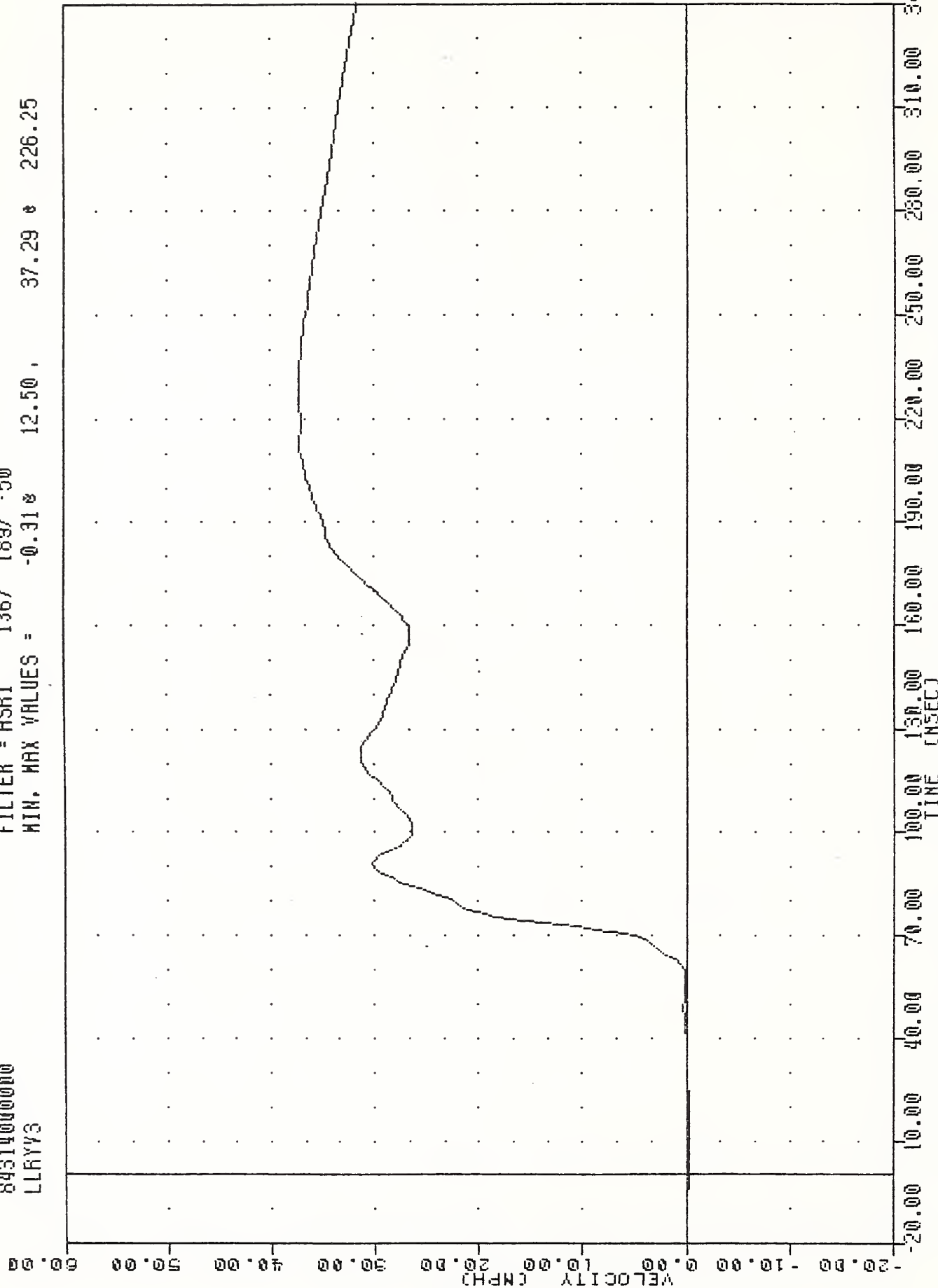
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER LEFT LOWER RIB ACCELERATION -2 Y AXIS

TAC 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LLRYV3

PL01 DATE 15-NOV-84 15:51:03

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -0.31% 12.50 , 37.29 * 226.25



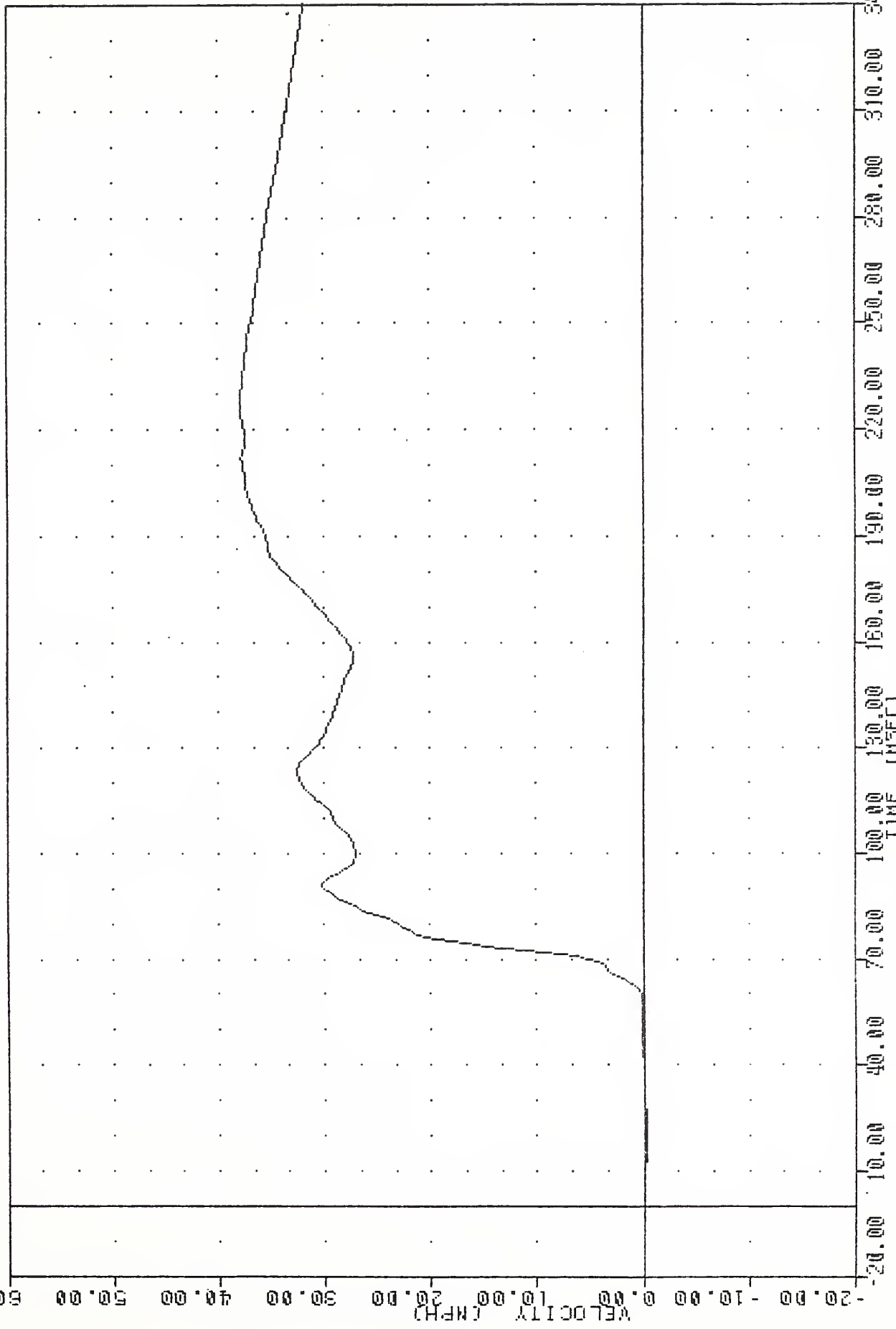
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING LLRYG3

PLU1 DATE 15-MAY-84 15:51:03

TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LLRYVC

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -0.28 21.88 37.87 225.63



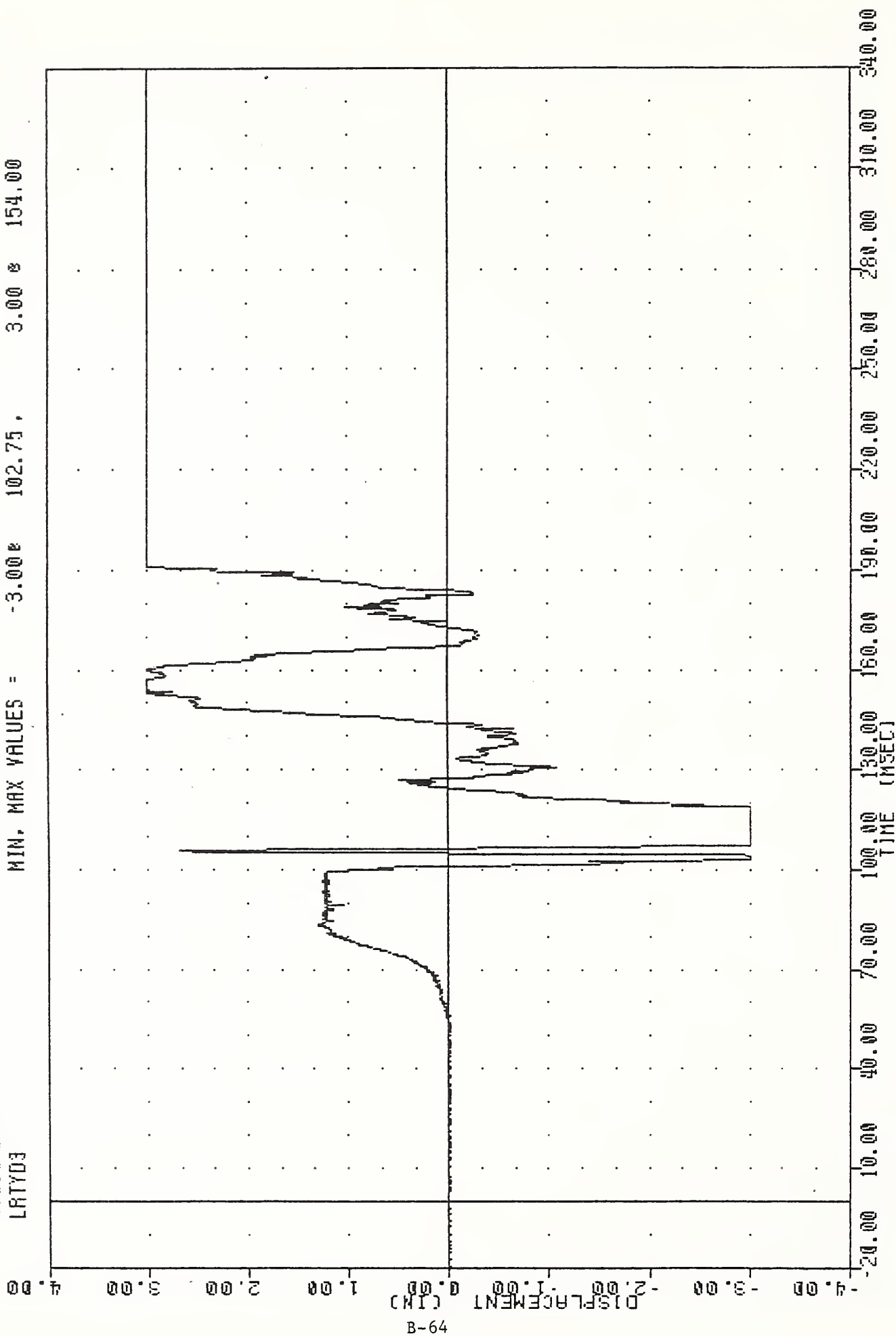
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING LLRYGC

TRC , 841103
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LRTYD3

PLU1 DATE 16-NOV-84 10:52:59

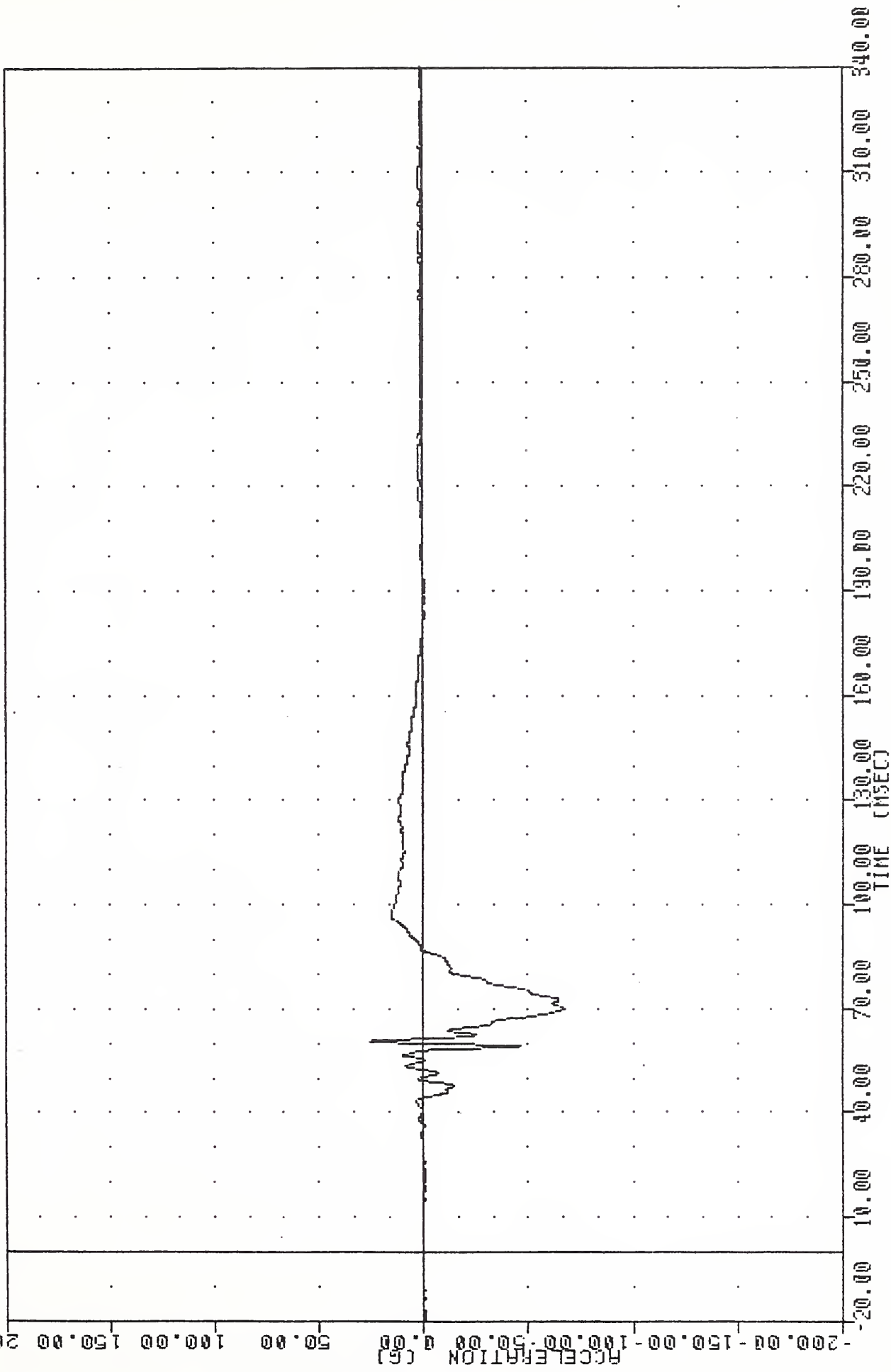
FILTER = ALPF 1650/ 5217/ -40

MIN. MAX VALUES = -3.000 102.75, 3.000 154.00



TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 843140000000
 PEVX63

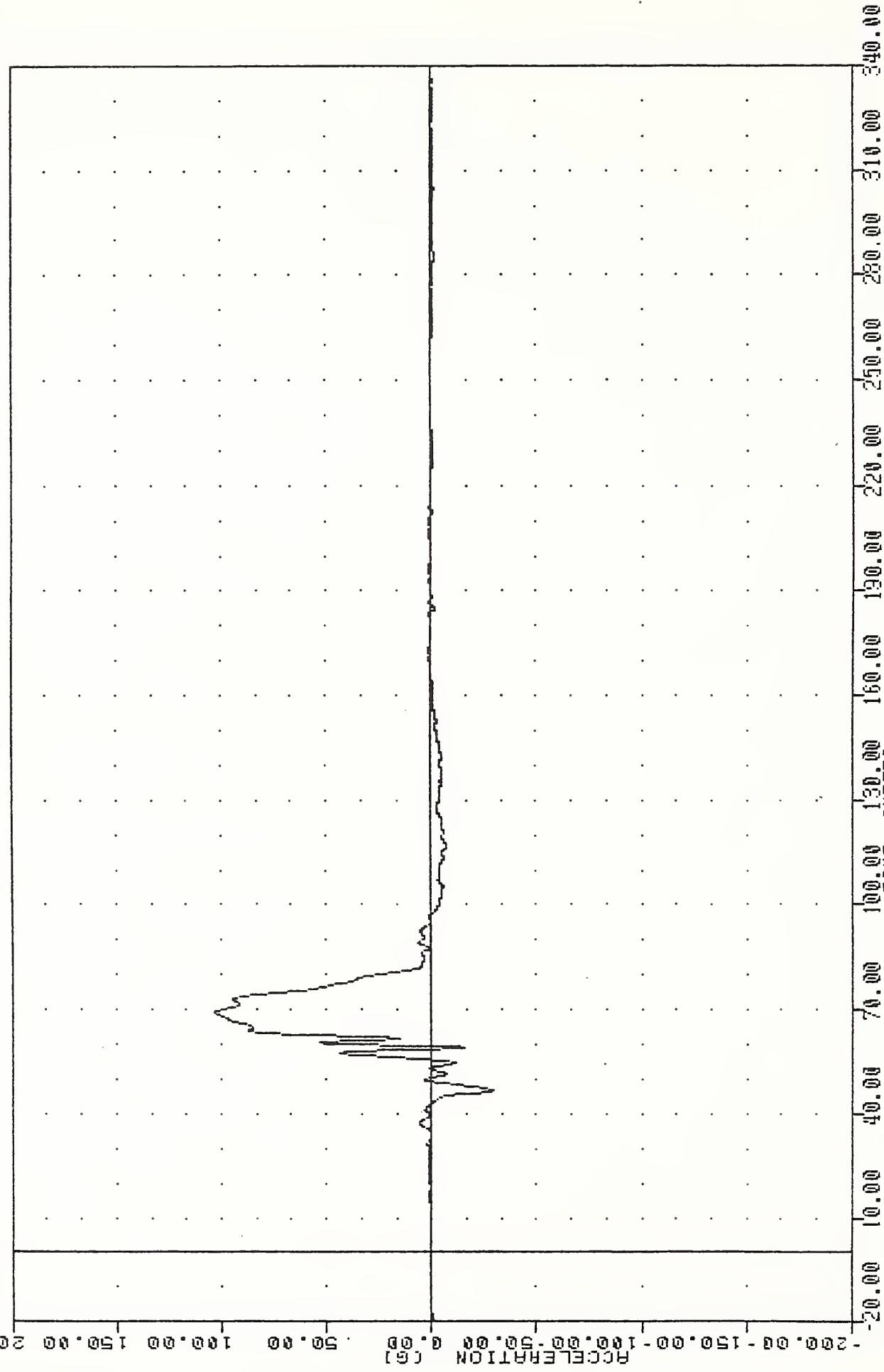
PL01 DATE 16-NOV-84 10:32:59
 FILTER = BLPF 300/ 949/ -40
 MIN. MAX VALUES = -67.34g 69.88g 26.11g 60.38



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER PELVIS ACCELERATION X AXIS

TRC 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 PEVY63

FLOI DATE 16-NOV-84 10:32:59
 FILTER = BLPF 300/ 949/ -40
 MIN, MAX VALUES = -29.17% 46.50 , 102.95 e 69.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER PELVIS ACCELERATION Y AXIS

TRC , 841109

15-NOV-84 15:51:48

MIN. MAX VALUES = 78.13 , 32.57 @ 75.75

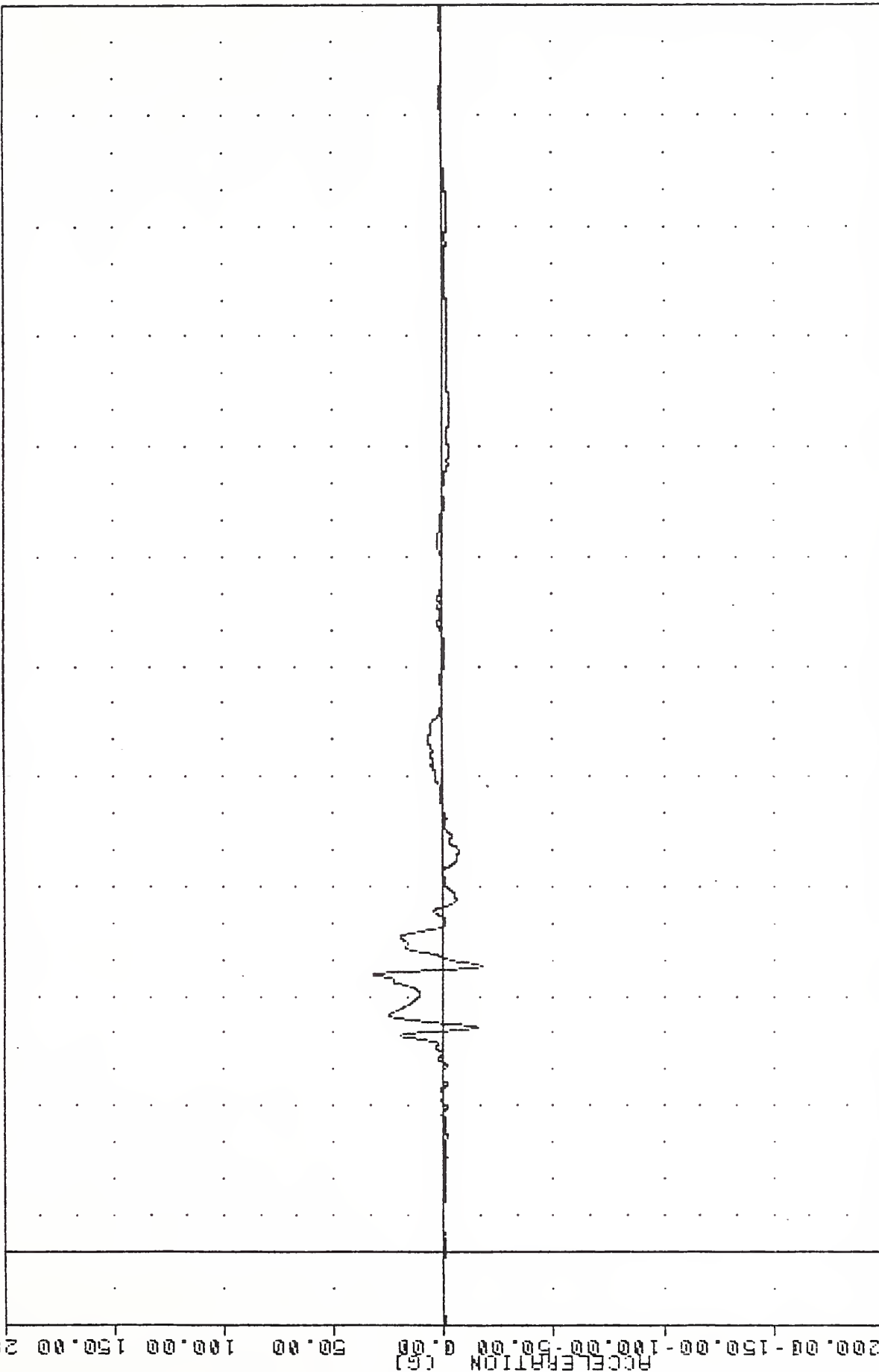
FILTER = BLPF 300/ 949/ -40

84314000000

PEVZ63

84314000000

PEVZ63



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT

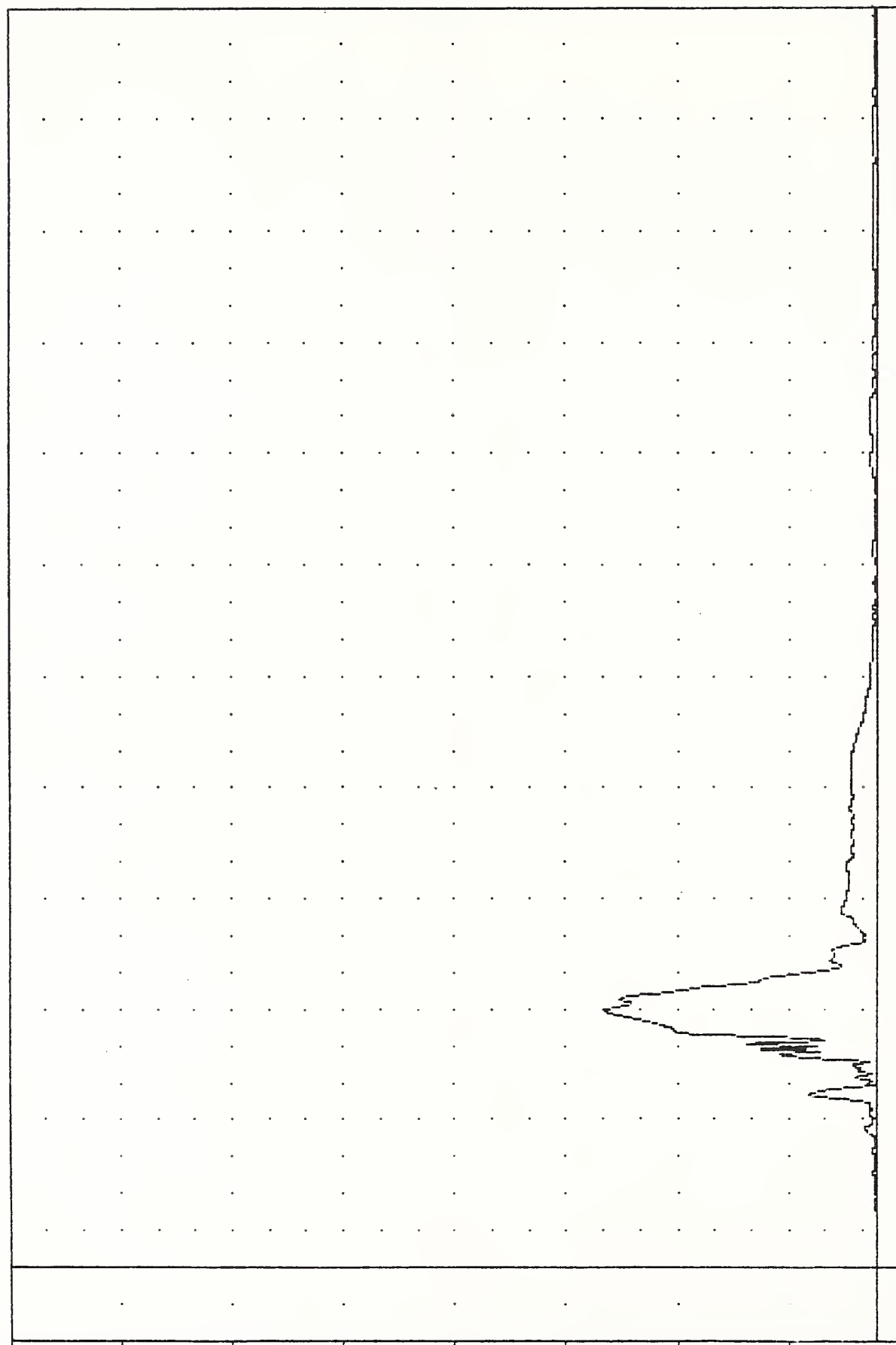
PASSENGER PELVIS ACCELERATION Z AXIS

TRC , 841103
SIDE AGGRESSIVE ATTRIBUTES
84314000000
PEVR63

PLOT DATE 15-NOV-84 15:51:48

FILTER = BLPF 300/ 949/ -40
MIN, MAX VALUES = 0.11e -15.13, 122.15 e 69.38

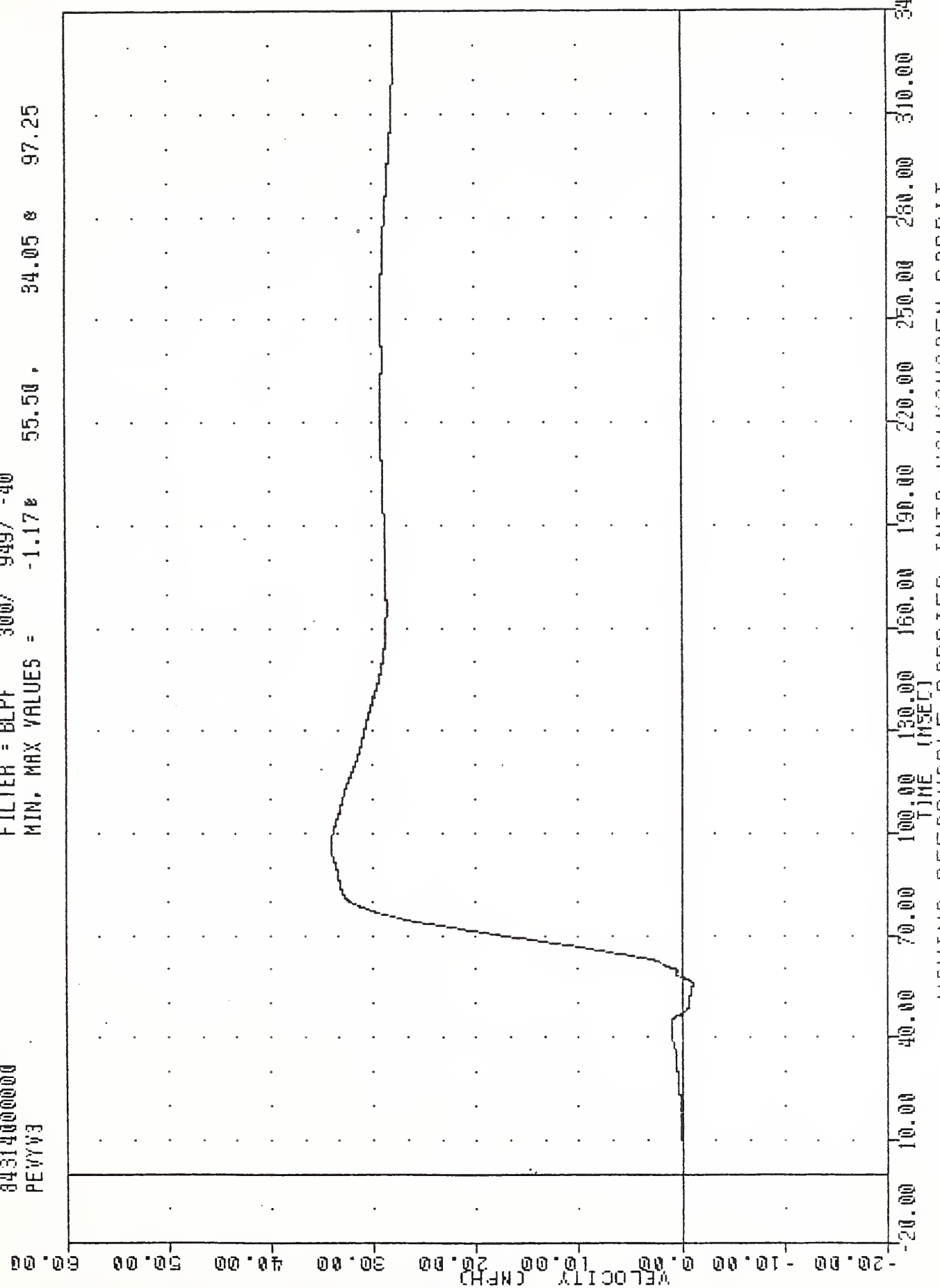
ACCELERATION (G)



-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00
TIME (MSEC)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER PELVIS RESULTANT

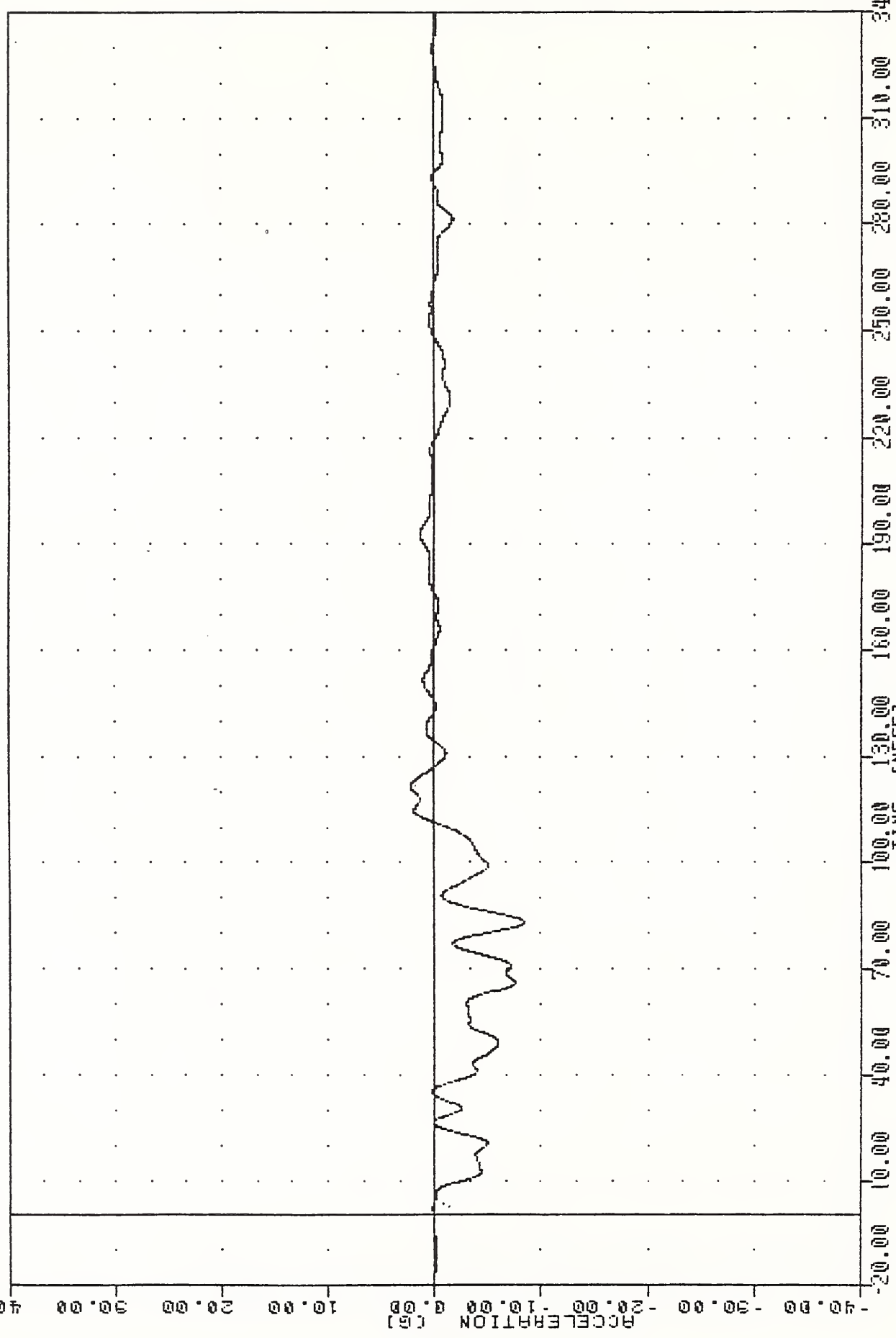
TRC 041109 15-NOV-84 15:53:17
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 PEVYV3
 FILTER = BLPF 300/ 949/ -40
 MIN. MAX VALUES = -1.17e 55.50 34.05 97.25



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING PEVYV3

TAL , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 RFSX61

PL01 DATE 15-NOV-84 15:51:48
 FILTER = BLPF 100/ 316/ -40
 MIN. MAX VALUES = -8.43e 83.00 , 2.20 e 121.25



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 VEHICLE RIGHT FRONT SILL ACCELERATION X AXIS

TRC , 841109

15-NOV-84 15:51:48

SIDE AGGRESSIVE ATTRIBUTES

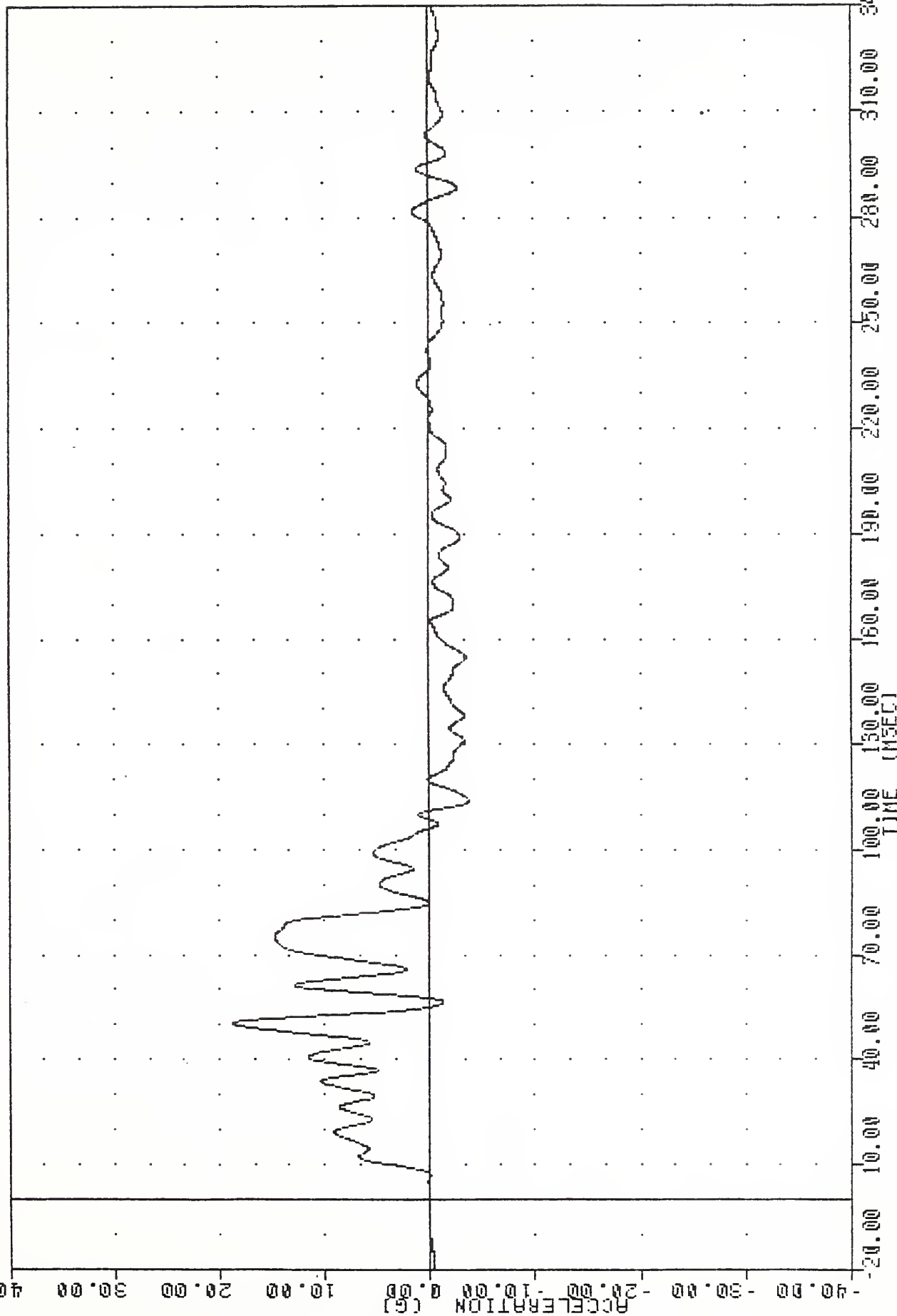
84314000000

FILTER = BLPF 100/ 316/ -40

AFSYG1

MIN. MAX VALUES = -3.78 113.88

18.73 50.25

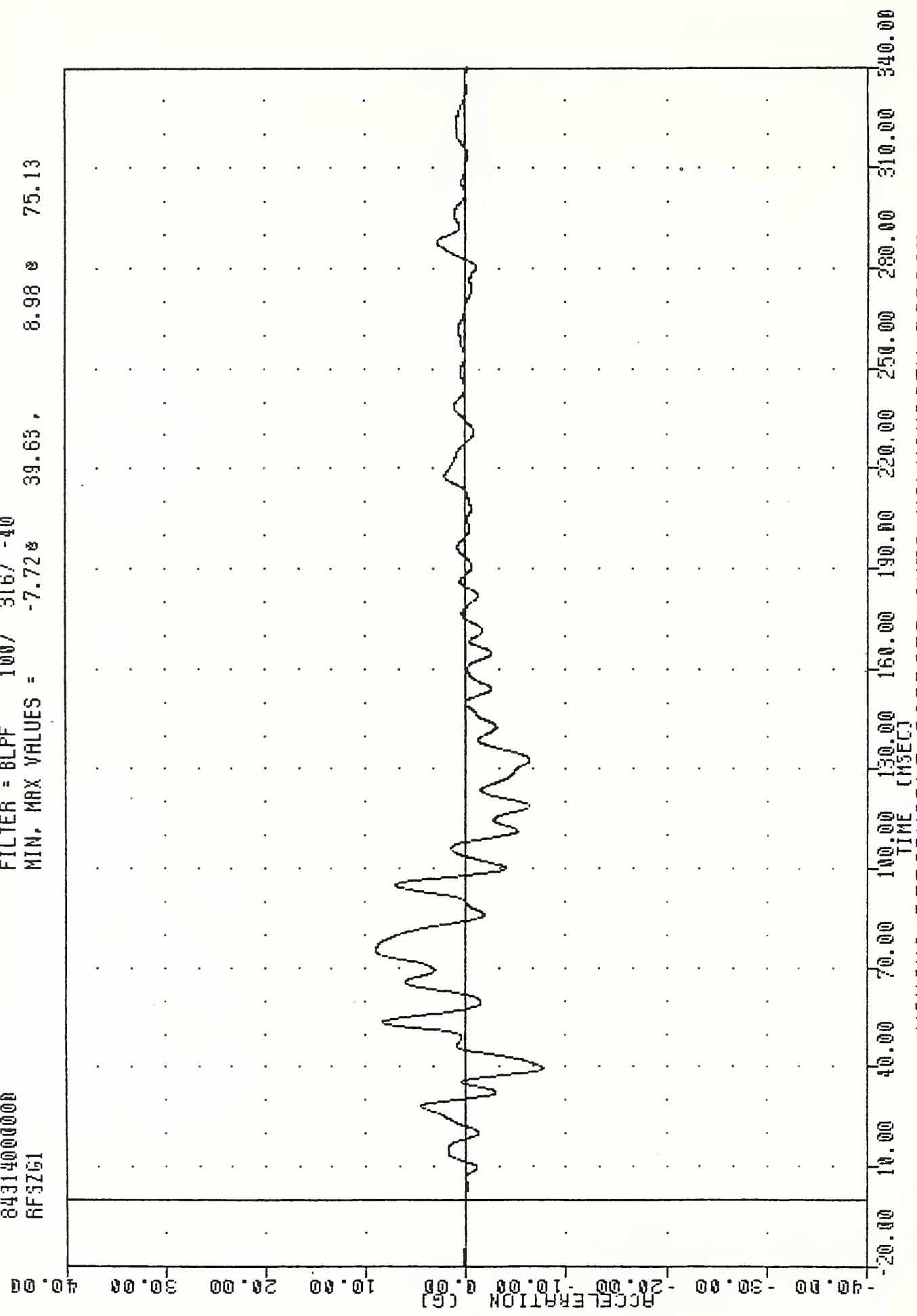


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE RIGHT FRONT STILL ACCELERATION Y AXIS

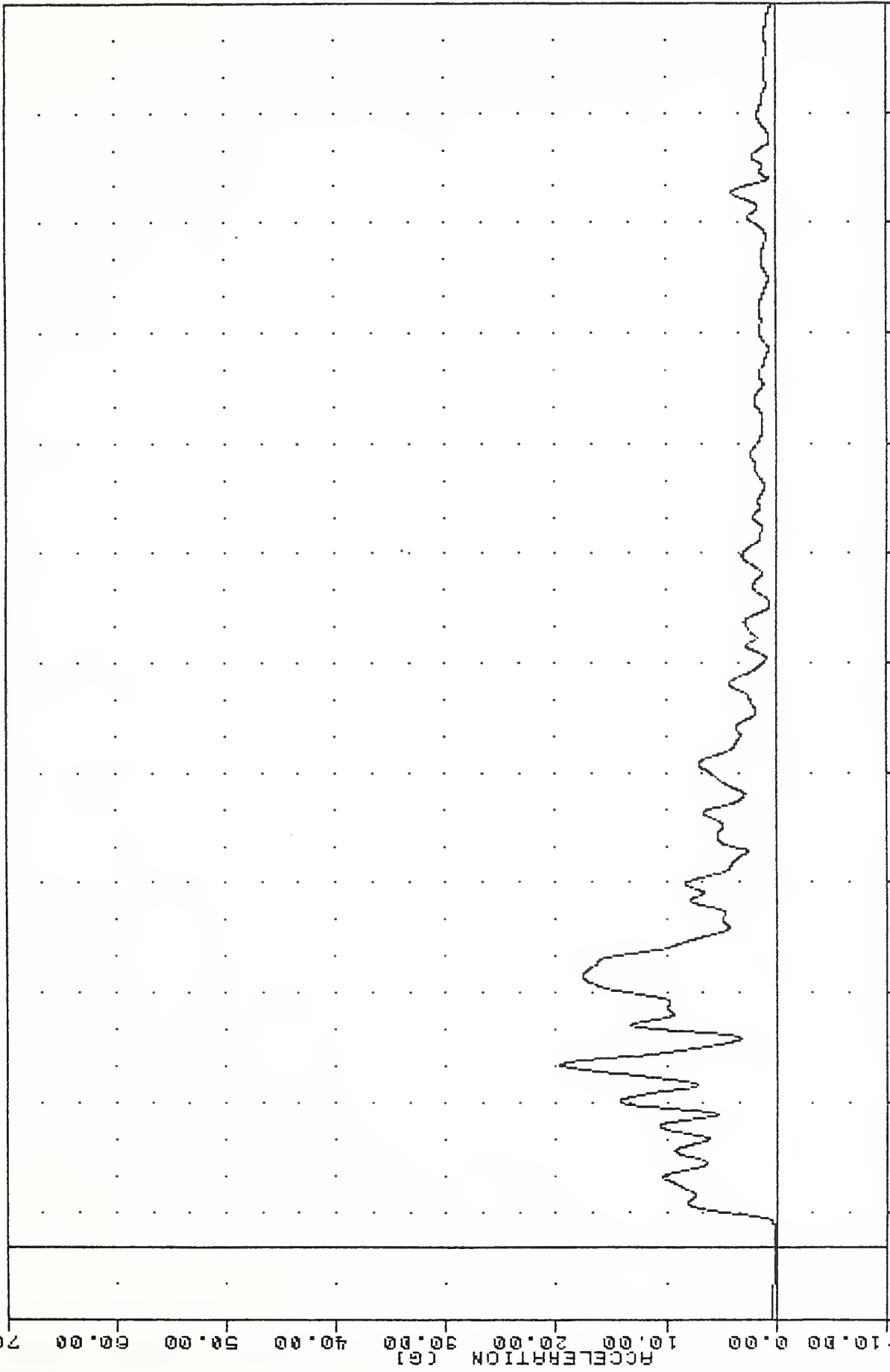
TRC , 241109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
RF3ZG1

PL01 DATE 15-NOV-84 15:51:48

FILTER = BLPF 100/ 316/ -40
MIN, MAX VALUES = -7.72 39.63, 8.98 75.13



TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 RFSRB1
 FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = 0.11* -1.63, 19.61 * 50.13
 15-NOV-84 15:51:48



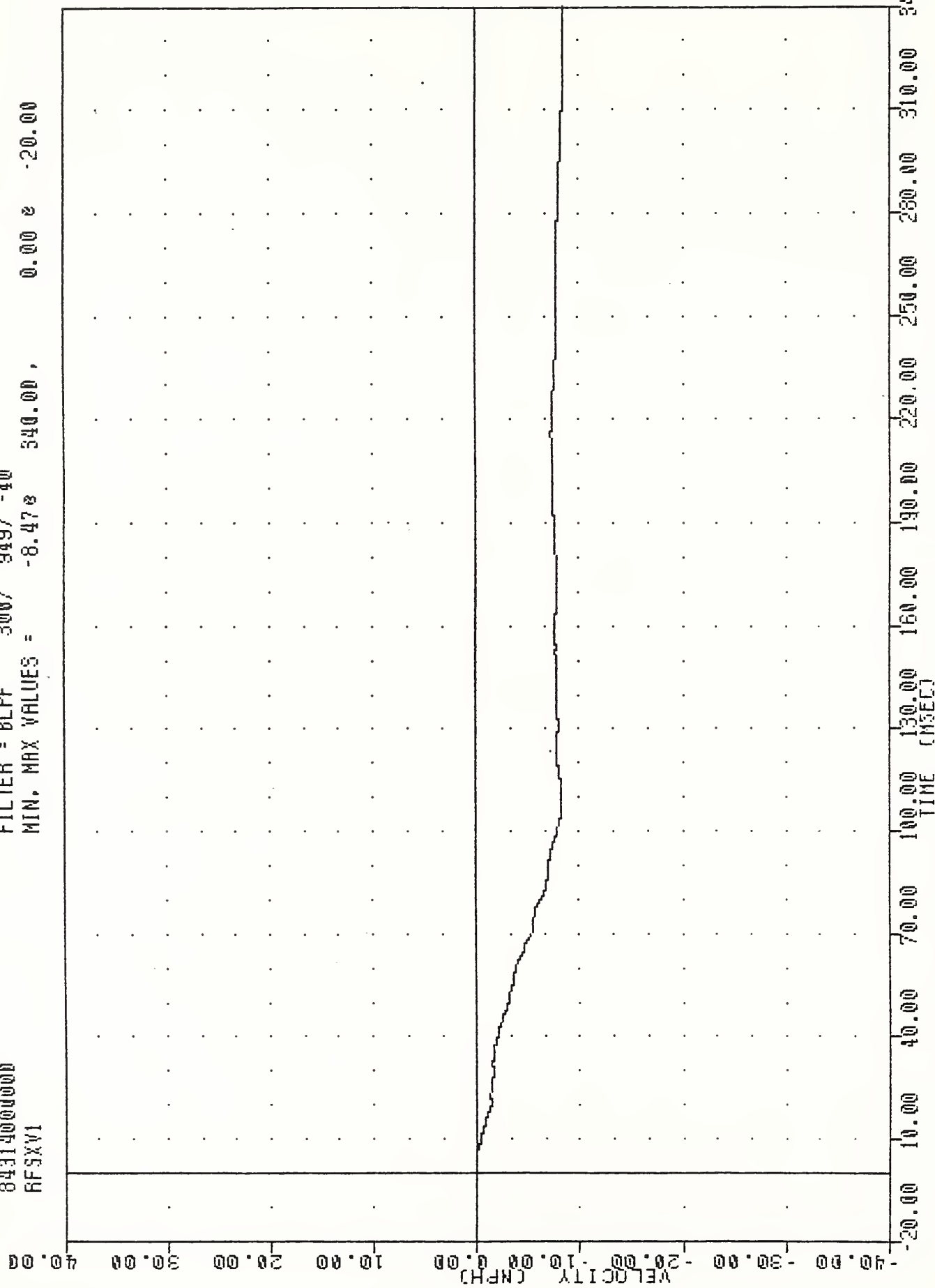
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 VEHICLE RIGHT FRONT SILL RESULTANT

PLU1 DATE 15-NOV-84 15:53:17

TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
RFSXV1

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = -8.478 340.00, 0.00 2 -20.00



B-74

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING RFSXG1

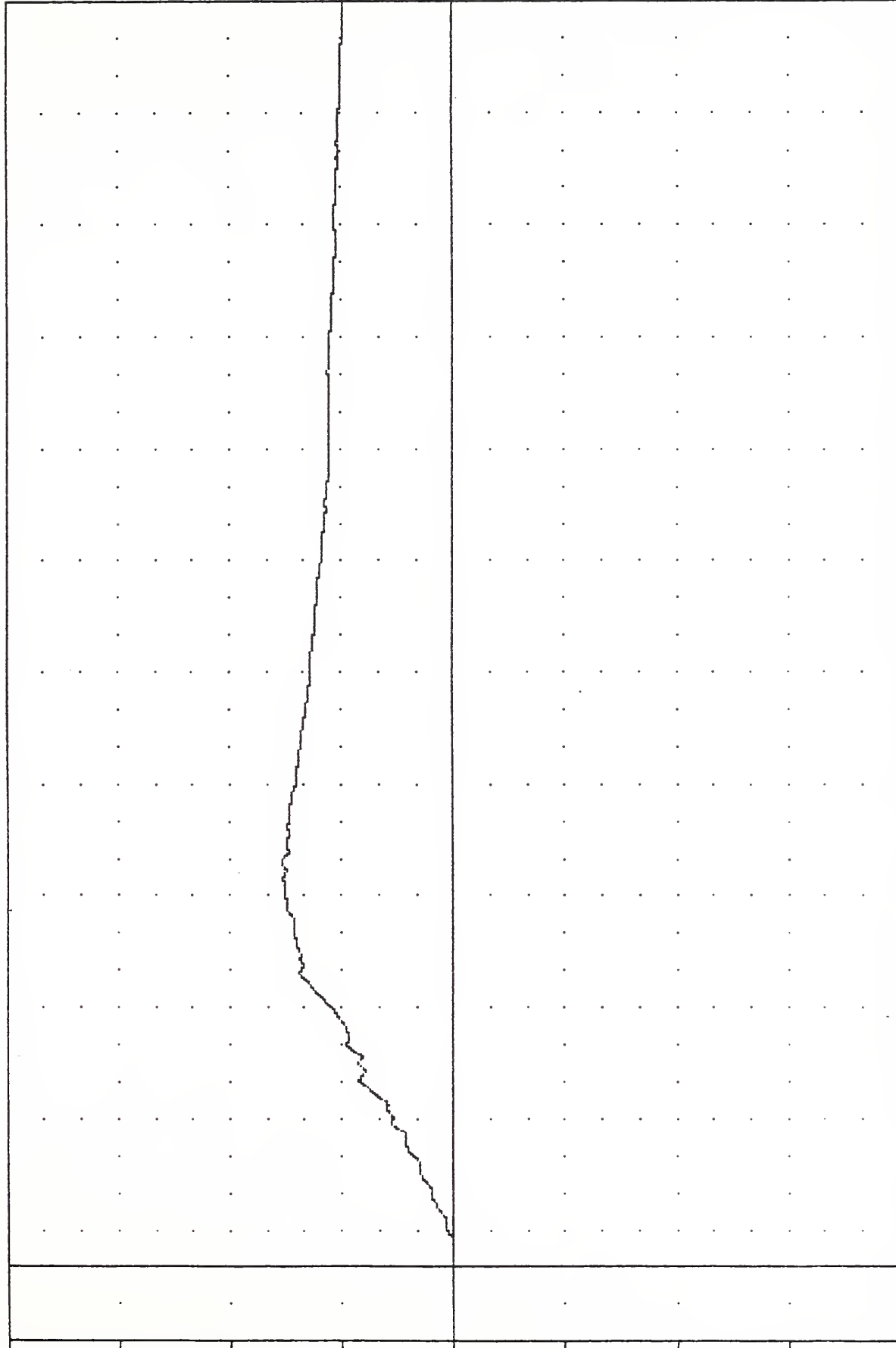
TAL , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
RFSYV1

PL01 DATE 15-NOV-84 15:53:17

FILTER = BLPF 300/ 949/ -40

MIN, MAX VALUES = -0.048 6.25 , 15.40 & 108.75

VELOCITY (CMPS)



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA W USING RFSYGI

TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
ARSXG2

FLU1 DATE 15-NOV-84 15:51:48

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -7.54e 83.25, 3.84 e 120.38

100.00

75.00

50.00

25.00

0.00

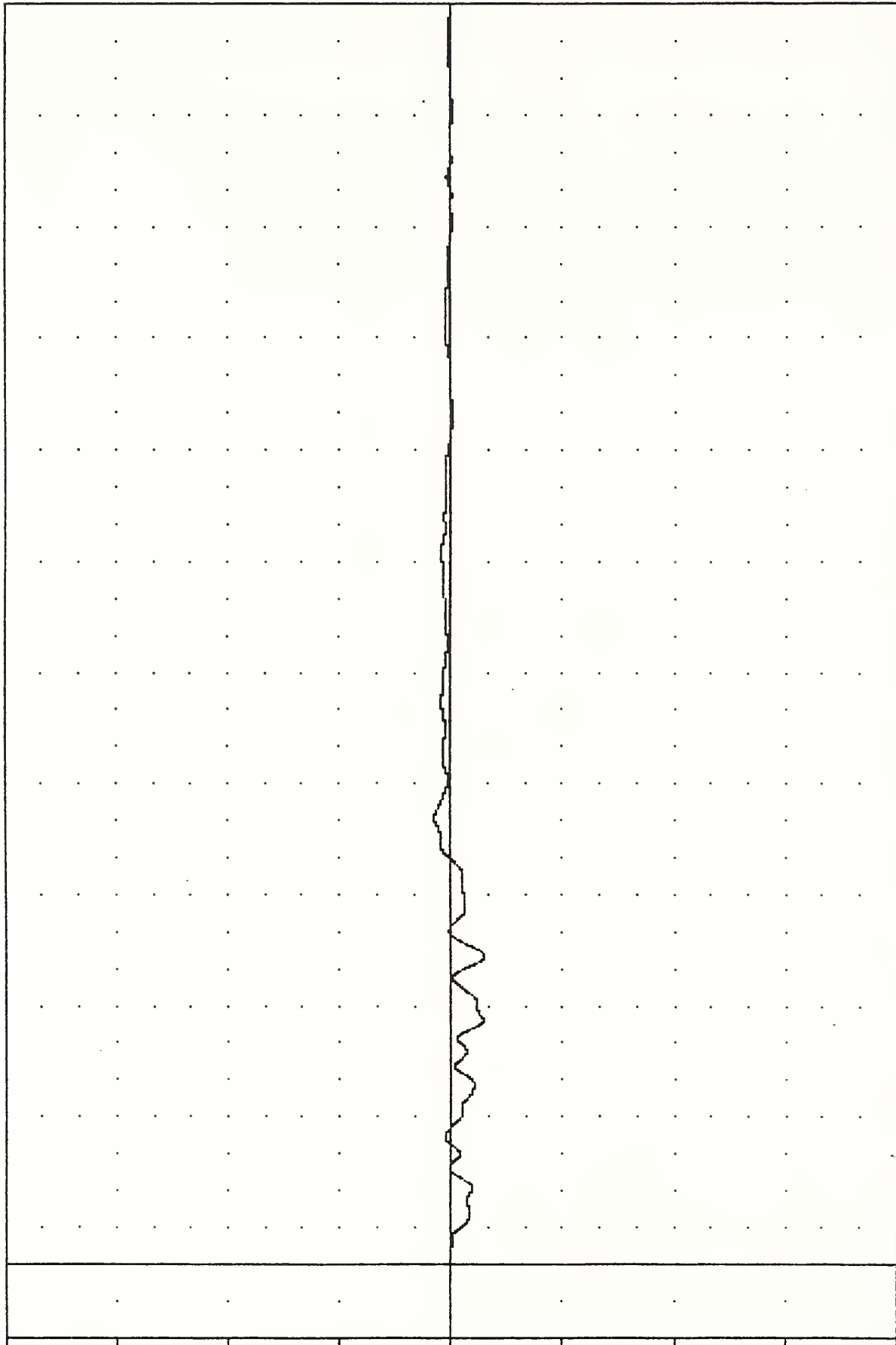
-25.00

-50.00

-75.00

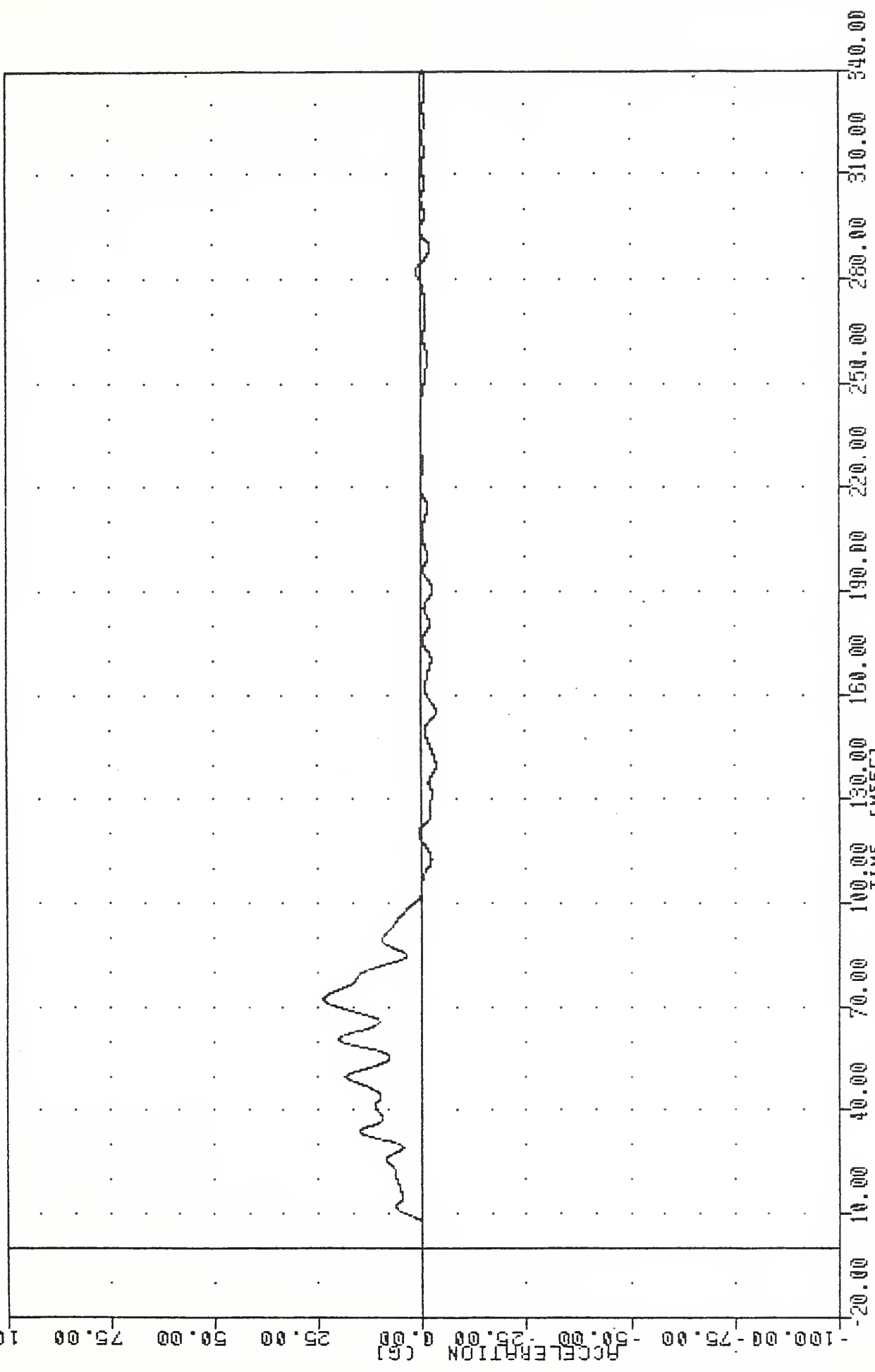
-100.00

B-76



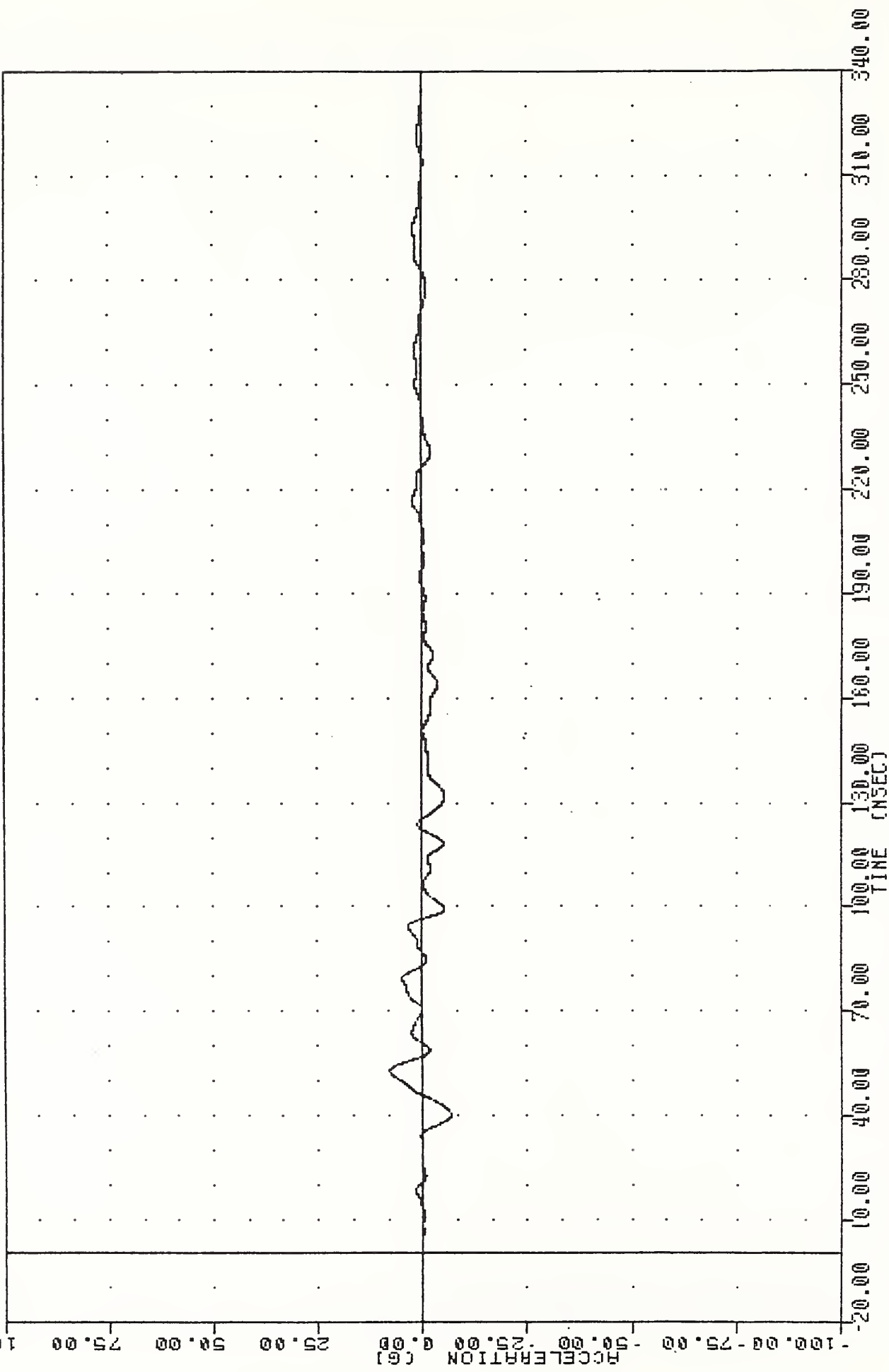
-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 ARSYG2
 PLOT DATE 15-NOV-84 15:51:48
 FILTER = 8LPF 100/ 316/ -40
 MIN, MAX VALUES = -3.548 155.13, 23.81 8 72.13



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 VEHICLE RIGHT REAR SILL ACCELERATION Y AXIS

TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 RRSZ62
 FL01 DATE 15-NOV-84 15:51:48
 FILTER = BLPF 100/ 316/ -40
 MIN. MAX VALUES = -6.67 40.00 7.91 52.50



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 VEHICLE RIGHT REAR SILL ACCELERATION Z AXIS

TRC 841109
 SIDE AGGRESSIVE ATTRIBUTES
 843140000000
 ARSAG2

PLUI DATE 15-NOV-84 15:51:48

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = 0.05e -1.38e 24.45e 72.00

70.00

60.00

50.00

40.00

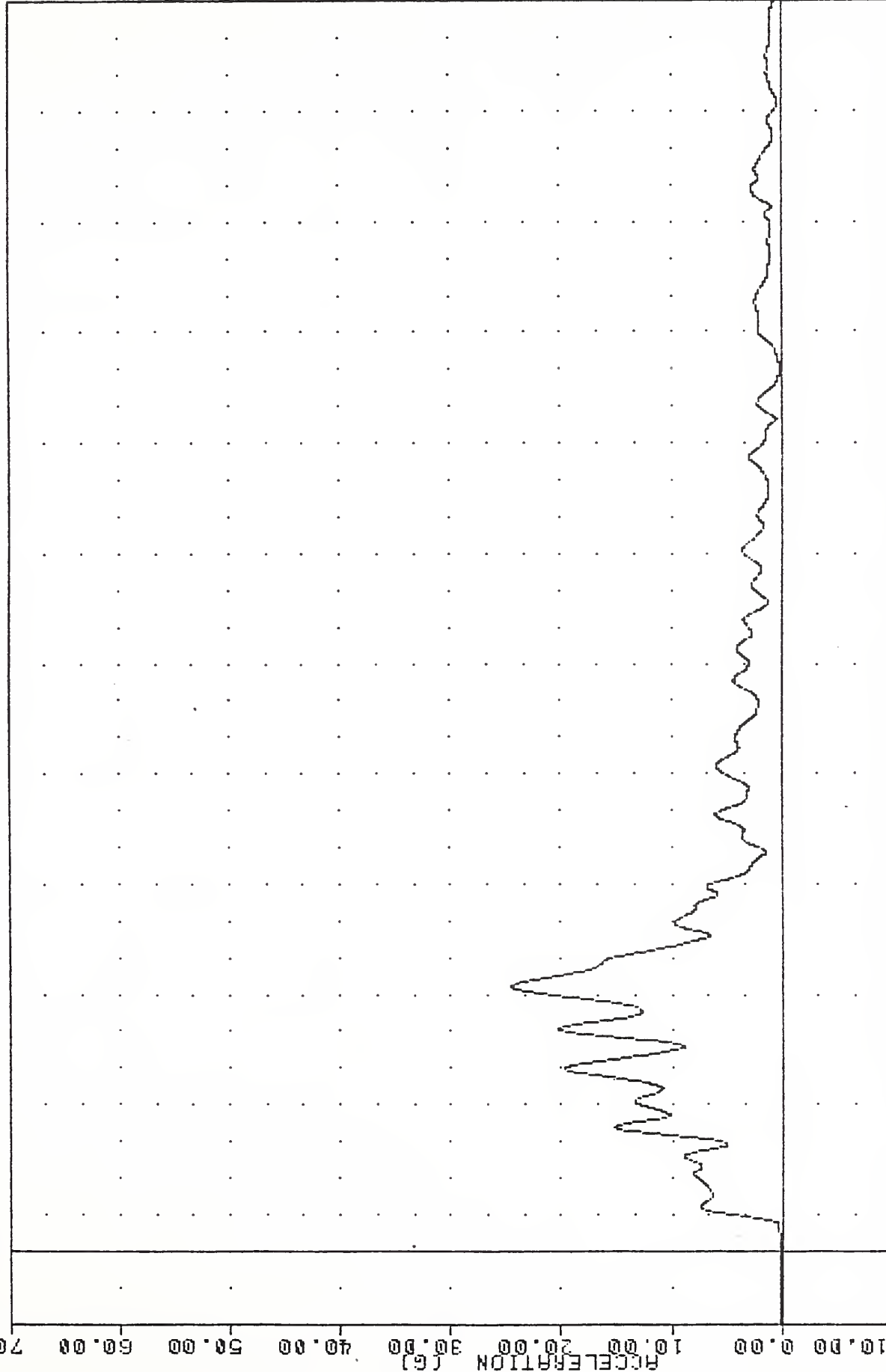
30.00

20.00

10.00

0.00

B-79

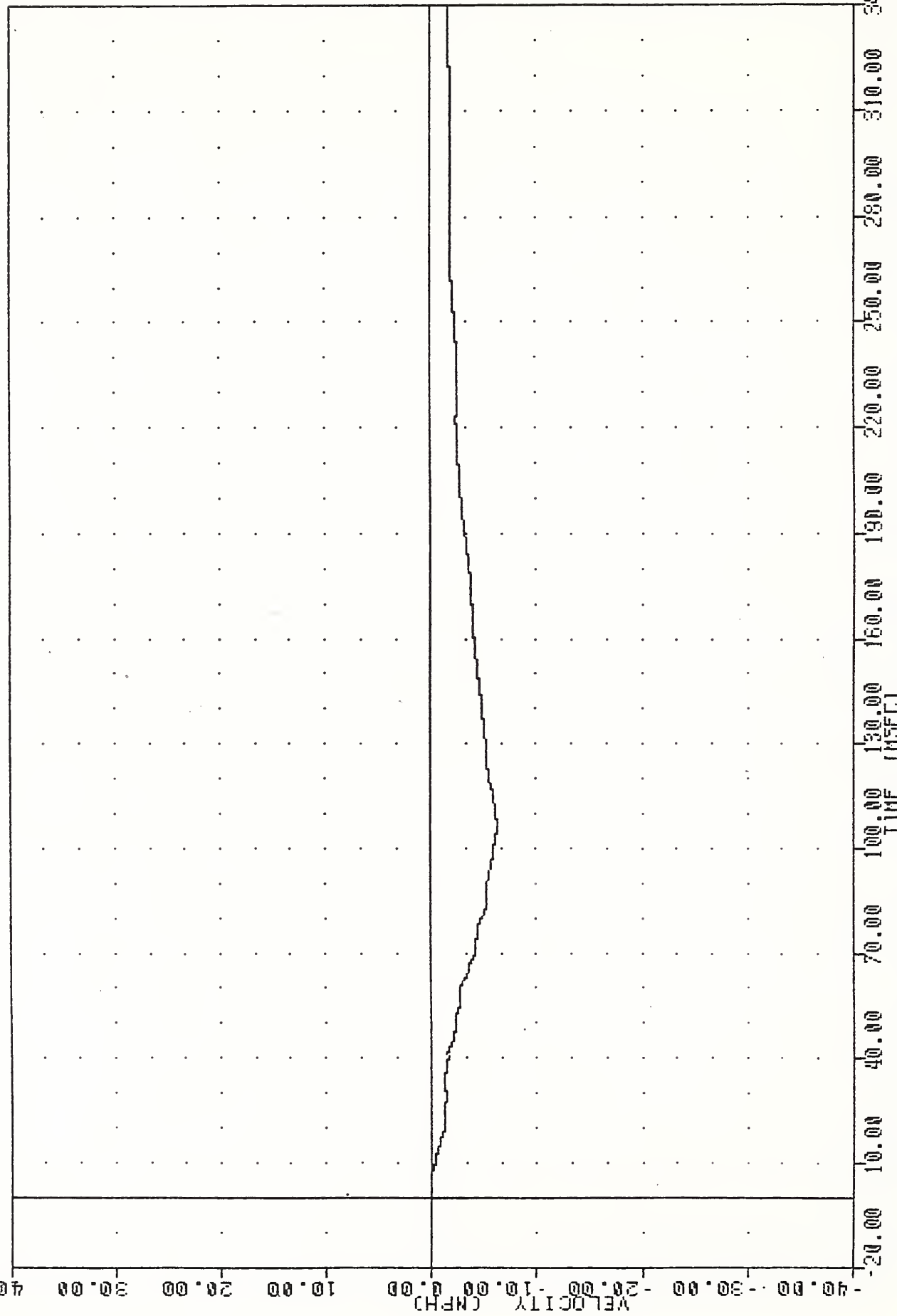


-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 VEHICLE RIGHT REAR SILL RESULTANT

TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 RRSXV2

PLU1 DATE 15-NOV-84 15:53:17
 FILTER = BLPF 300/ 949/ -40
 MIN, MAX VALUES = -6.26% 105.88, 0.01 % -12.25



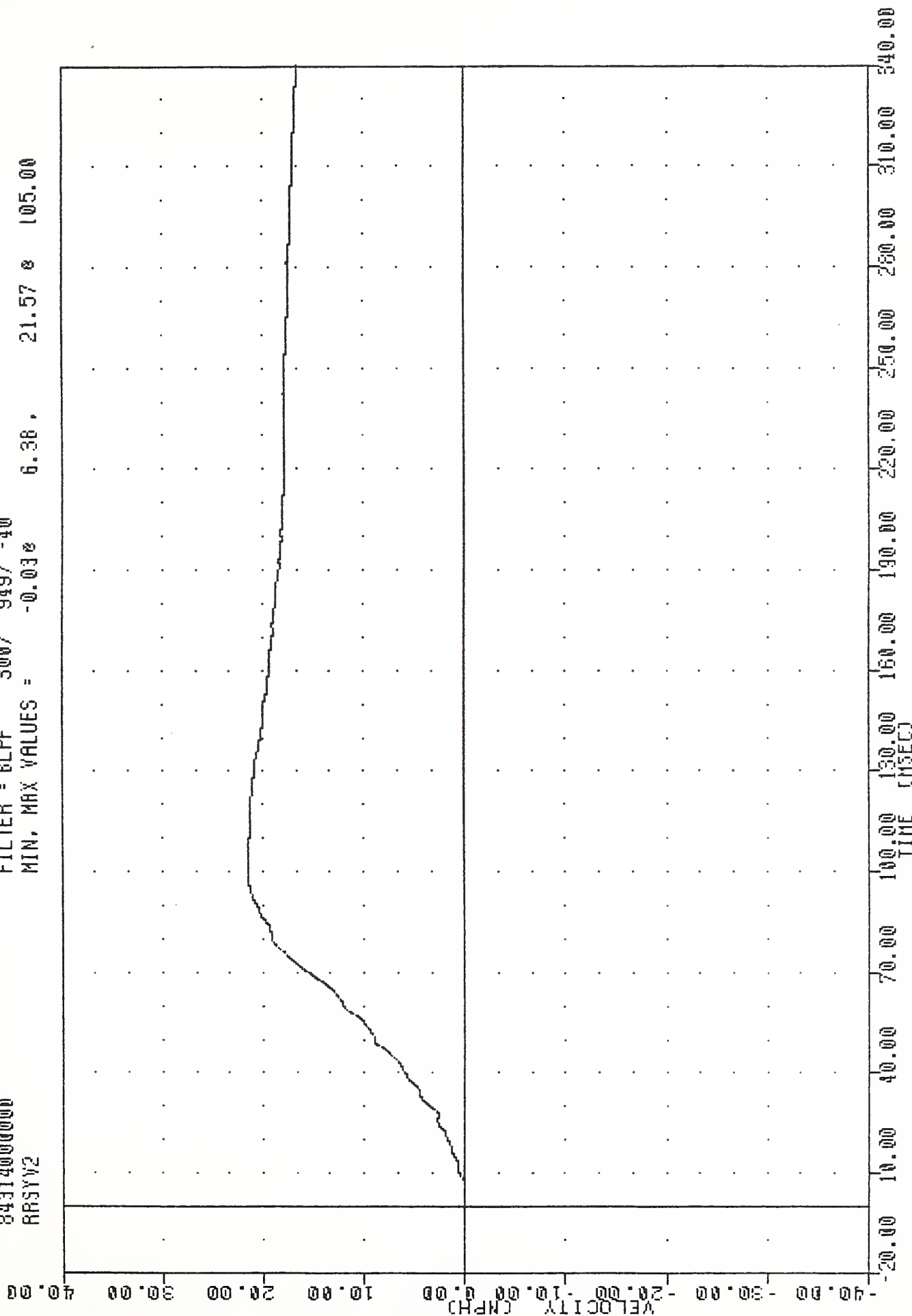
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING RRSXG2

TRC 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
RPSV2

PLU1 DATE 15-NOV-84 15:53:17

FILTER = BLPF 300/ 949/ -40

MIN, MAX VALUES = -0.030 6.38, 21.57 0 105.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING RPSV62

TRC , 641109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
RDKXG3

PLU1 DATE 15-NOV-84 15:51:48

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = -32.25 78.75, 12.92 87.63

40.00

30.00

20.00

10.00

0.00

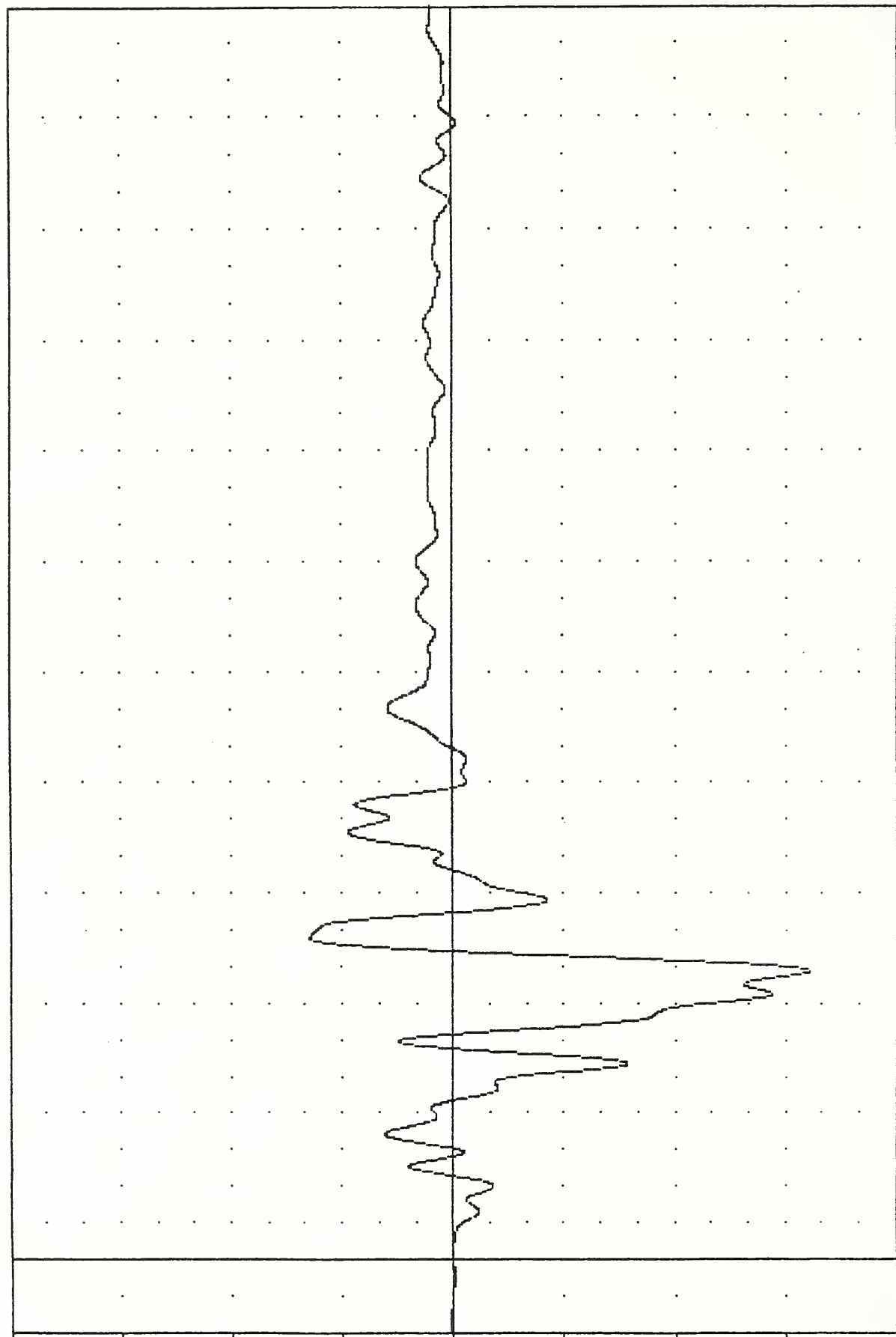
-10.00

-20.00

-30.00

-40.00

B-82



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT

VEHICLE REAR DECK ACCELERATION X AXIS

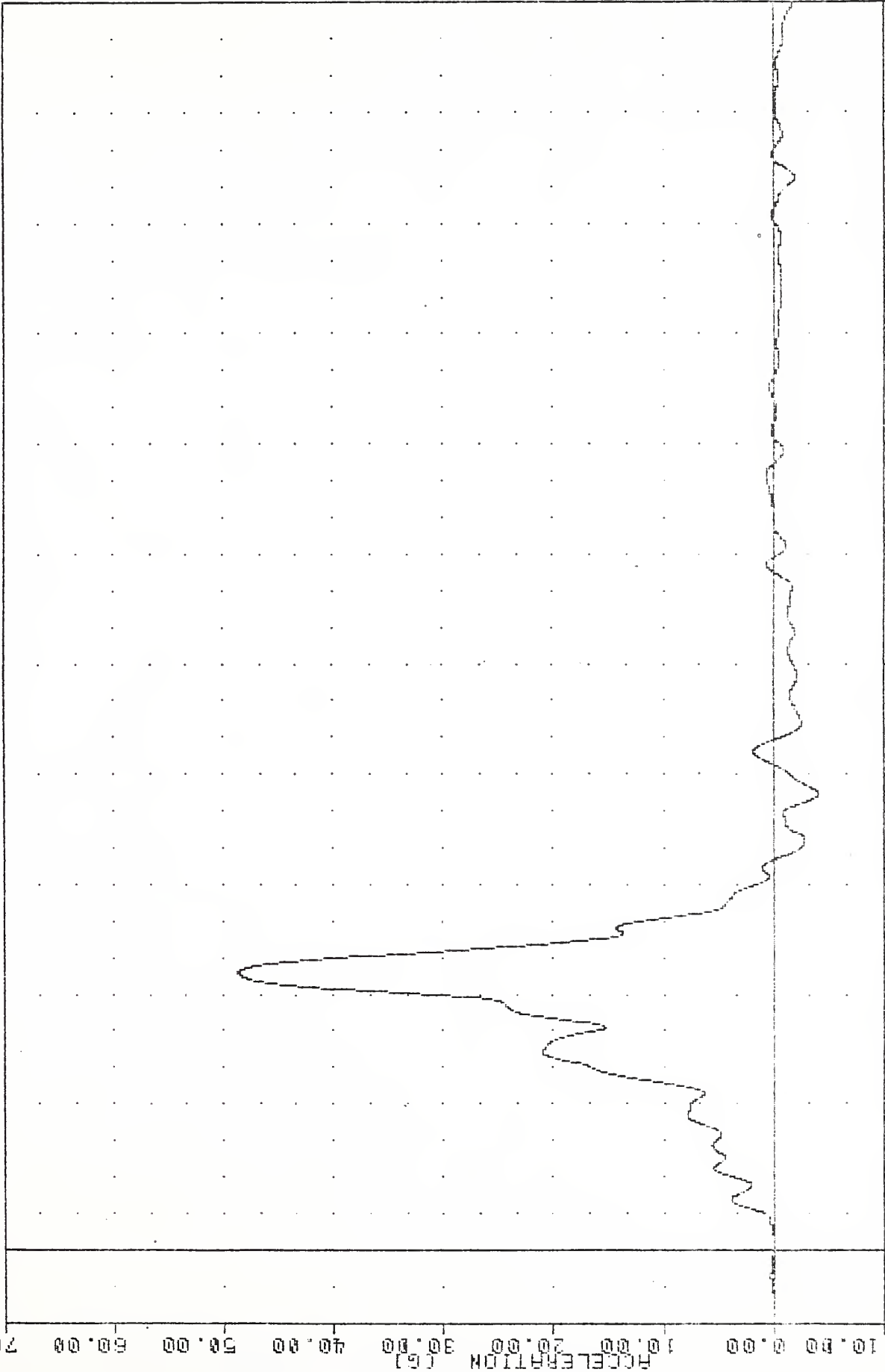
TRL 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 ROKY63

PLU1 DATE 19-NOV-84 14:26:30

FILTER = BLFF 100/ 316/ -40

MIN. MAX VALUES = -4.11E 124.38 48.62 8 75.63

70.00



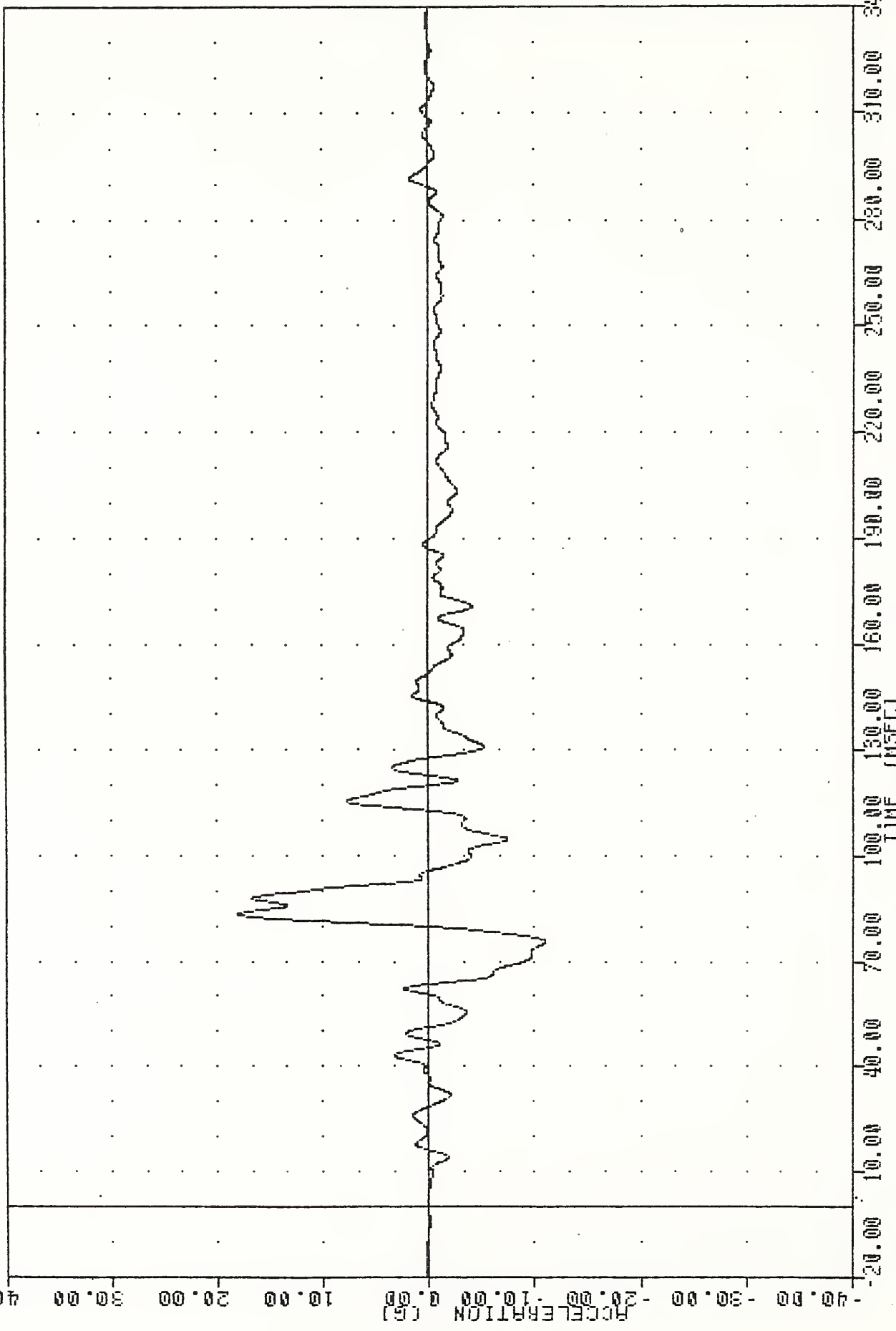
B-83

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 VEHICLE REAR DECK ACCELERATION Y AXIS

PLU1 DATE 15-NOV-84 15:51:48

TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
RDKZ63

FILTER = BLPF 100/ 316/ -40
MIN, MAX VALUES = -10.95 75.50 , 18.06 83.13



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE REAR DECK ACCELERATION Z AXIS

TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
ADKRG3

PLU1 DATE 15-NOV-84 15:51:48

FILTER = 8LFF 100/ 316/ -40

MIN, MAX VALUES = 0.058 -1.75, 56.85 76.88

70.00

60.00

50.00

40.00

30.00

ACCELERATION (G)

10.00

0.00

-10.00

-20.00

10.00

20.00

30.00

40.00

50.00

60.00

70.00

80.00

90.00

100.00

110.00

120.00

130.00

140.00

150.00

160.00

170.00

180.00

190.00

200.00

210.00

220.00

230.00

240.00

250.00

260.00

270.00

280.00

290.00

300.00

310.00

320.00

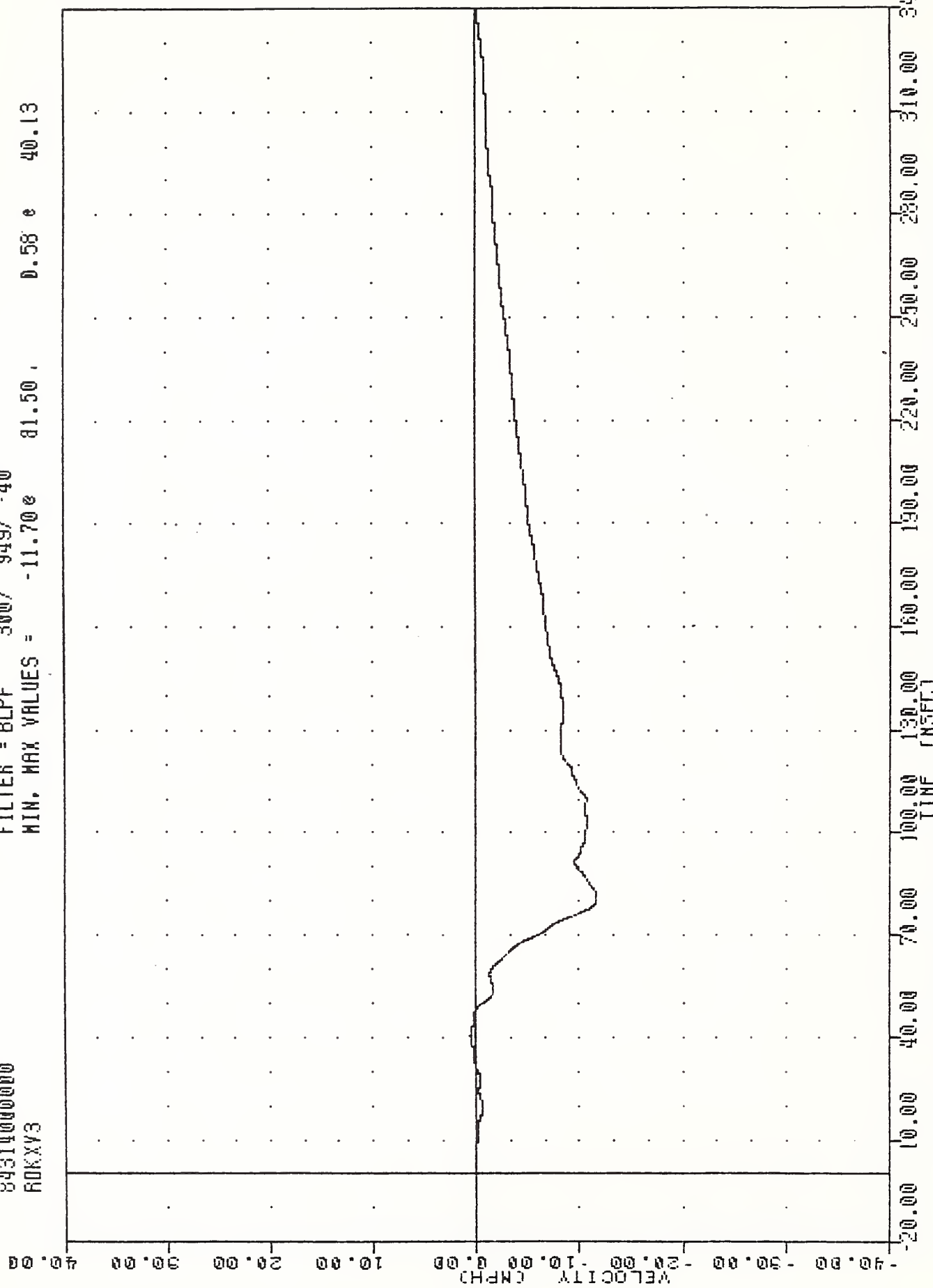
330.00

340.00

350.00

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE REAR DECK RESULTANT

TAL , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 RDKXV3
 PL01 DATE 15-NOV-84 15:53:17
 FILTER = BLPF 300/ 949/ -40
 MIN. MAX VALUES = -11.70e 81.50 , 0.58 e 40.13



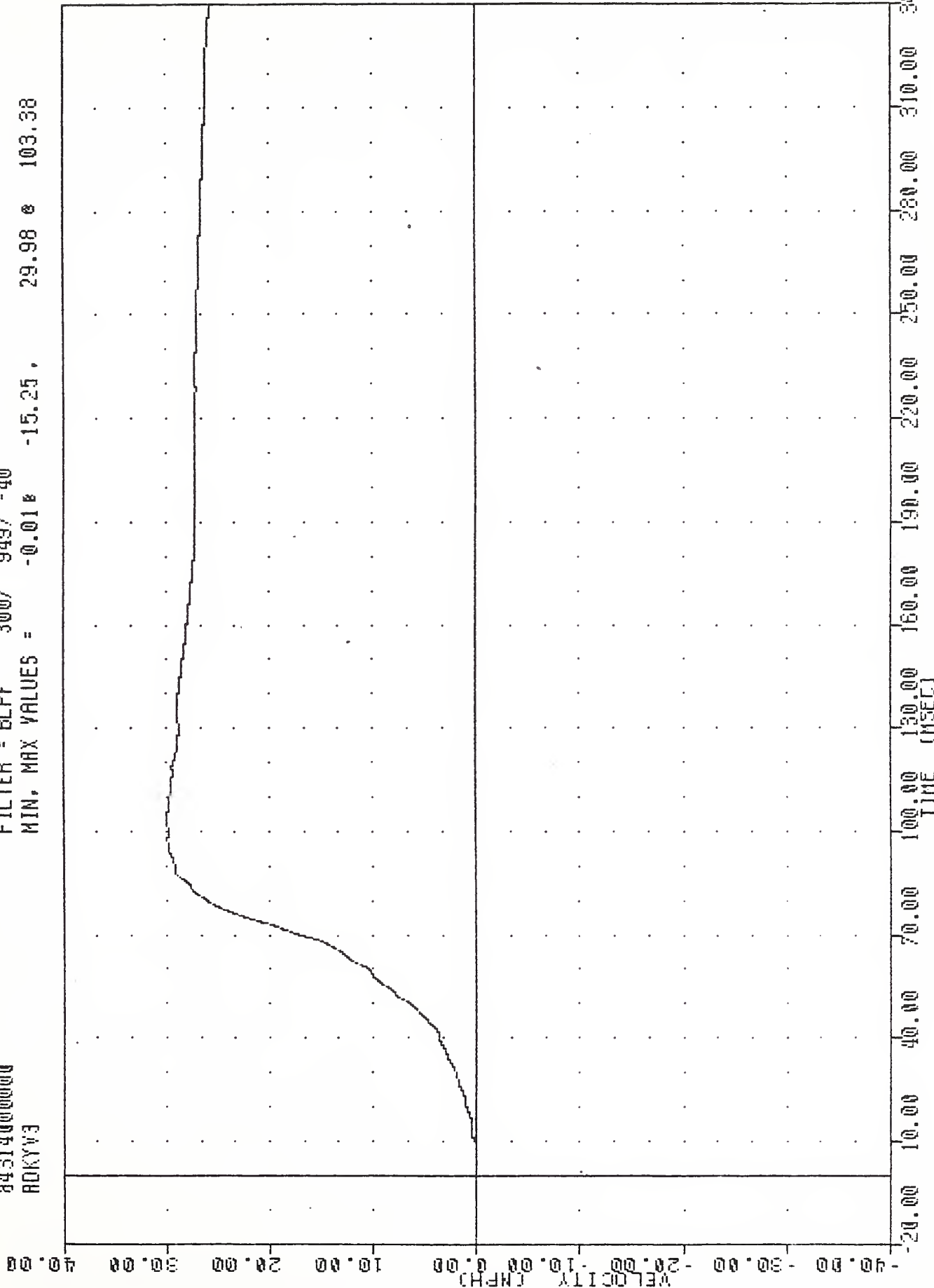
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING RDKXG3

TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 ROKYV3

PLU DATE 15-NOV-84 15:53:17

FILTER = BLPF 300/ 949/ -40

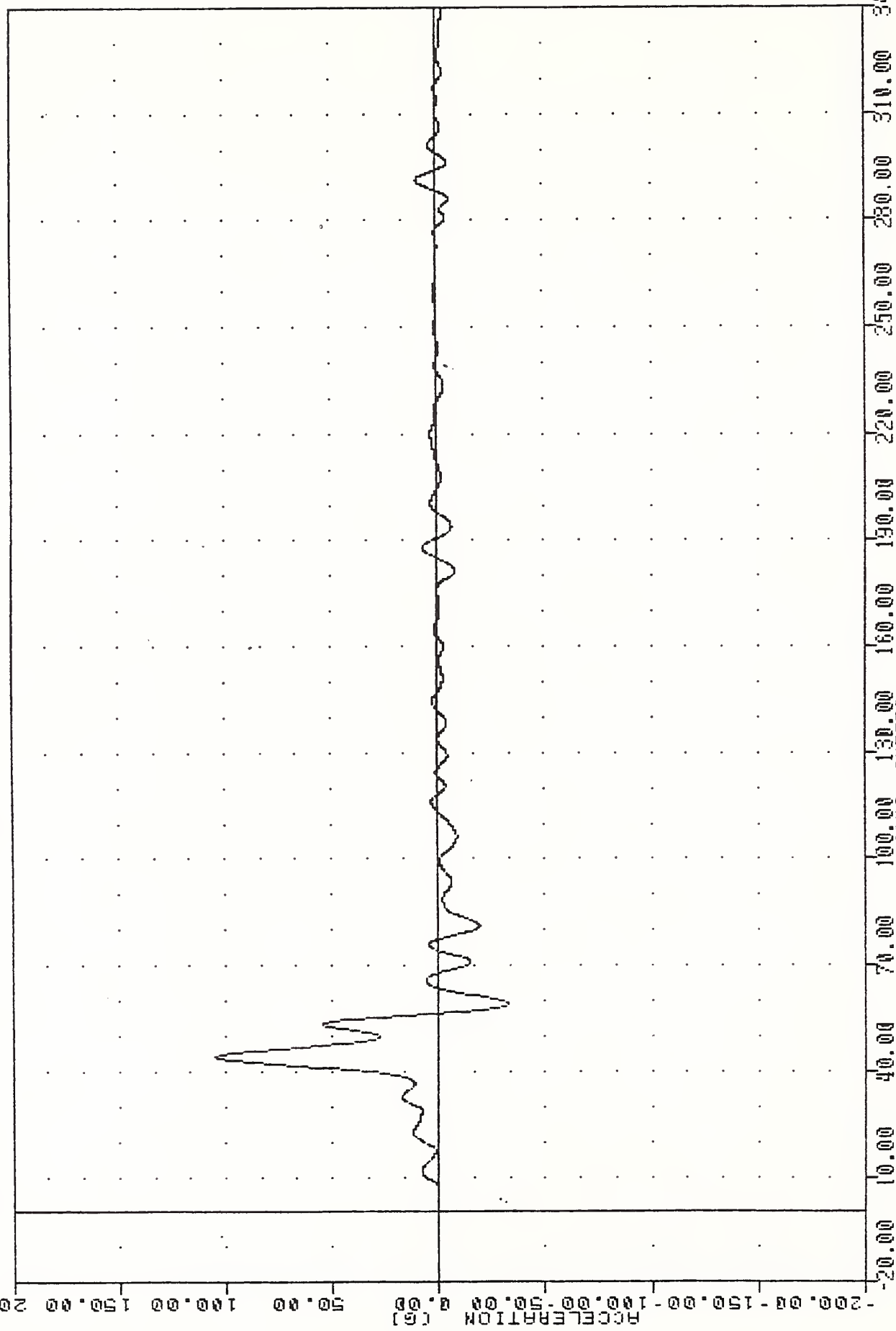
MIN, MAX VALUES = -0.018 -15.25, 29.98 @ 103.38



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA W USING ROKY63

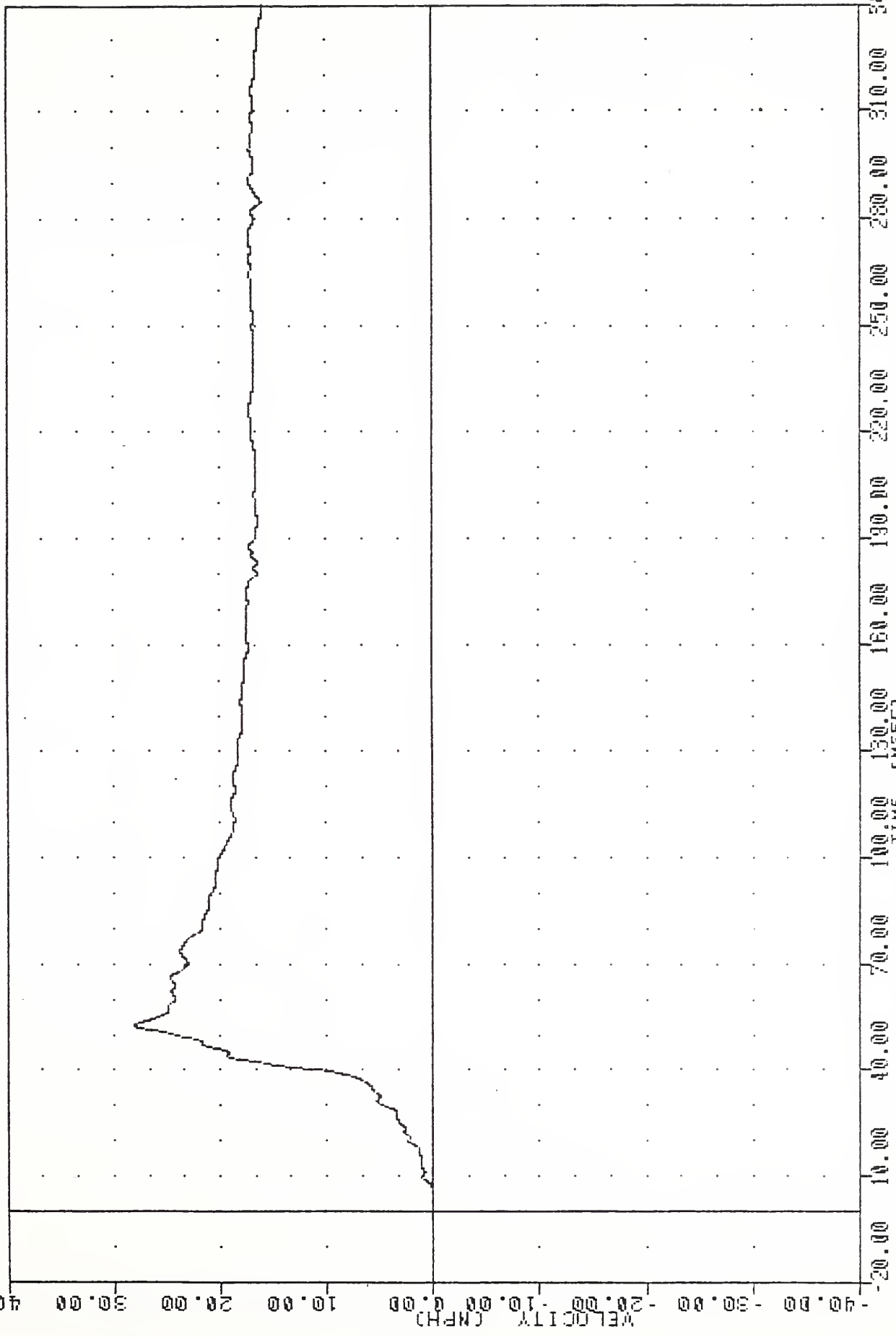
TAC 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LRSY64

PLT DATE 15-NOV-84 15:51:48
FILTER = BLPF 100/ 316/ -40
MIN. MAX VALUES = -32.80e 59.00 104.82 e 43.88



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE LEFT REAR SILL ACCELERATION Y AXIS

TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 LRSYV4
 PLOT DATE 15-NOV-84 15:53:17
 FILTER = 8LPF 300/ 949/ -10
 MIN. MAX VALUES = 0.000 -20.00, 28.03 0 52.50



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING LRSY64

TRC 841109 15-NOV-84 15:51:48

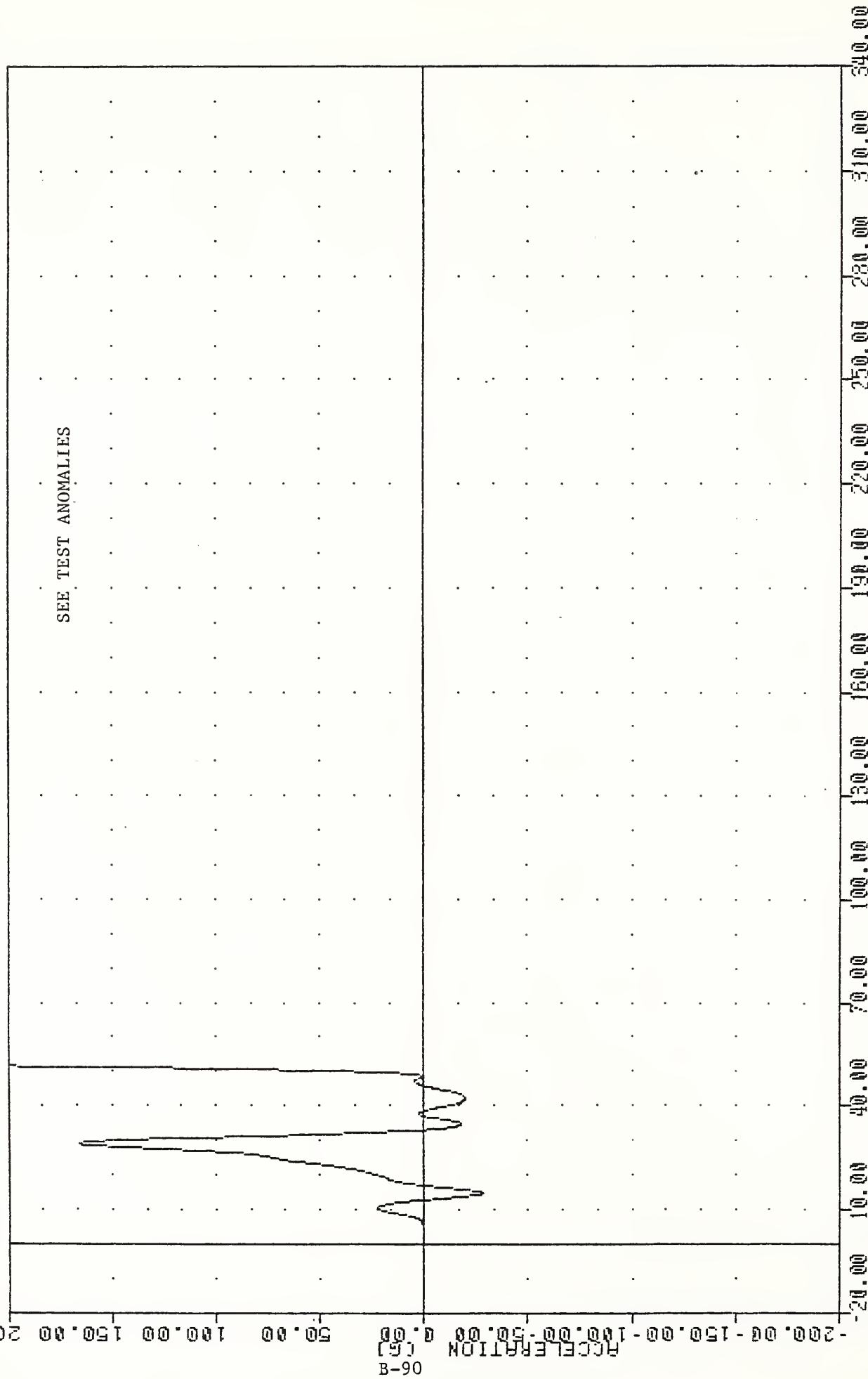
SIDE AGGRESSIVE ATTRIBUTES

84314000000

LFSY65

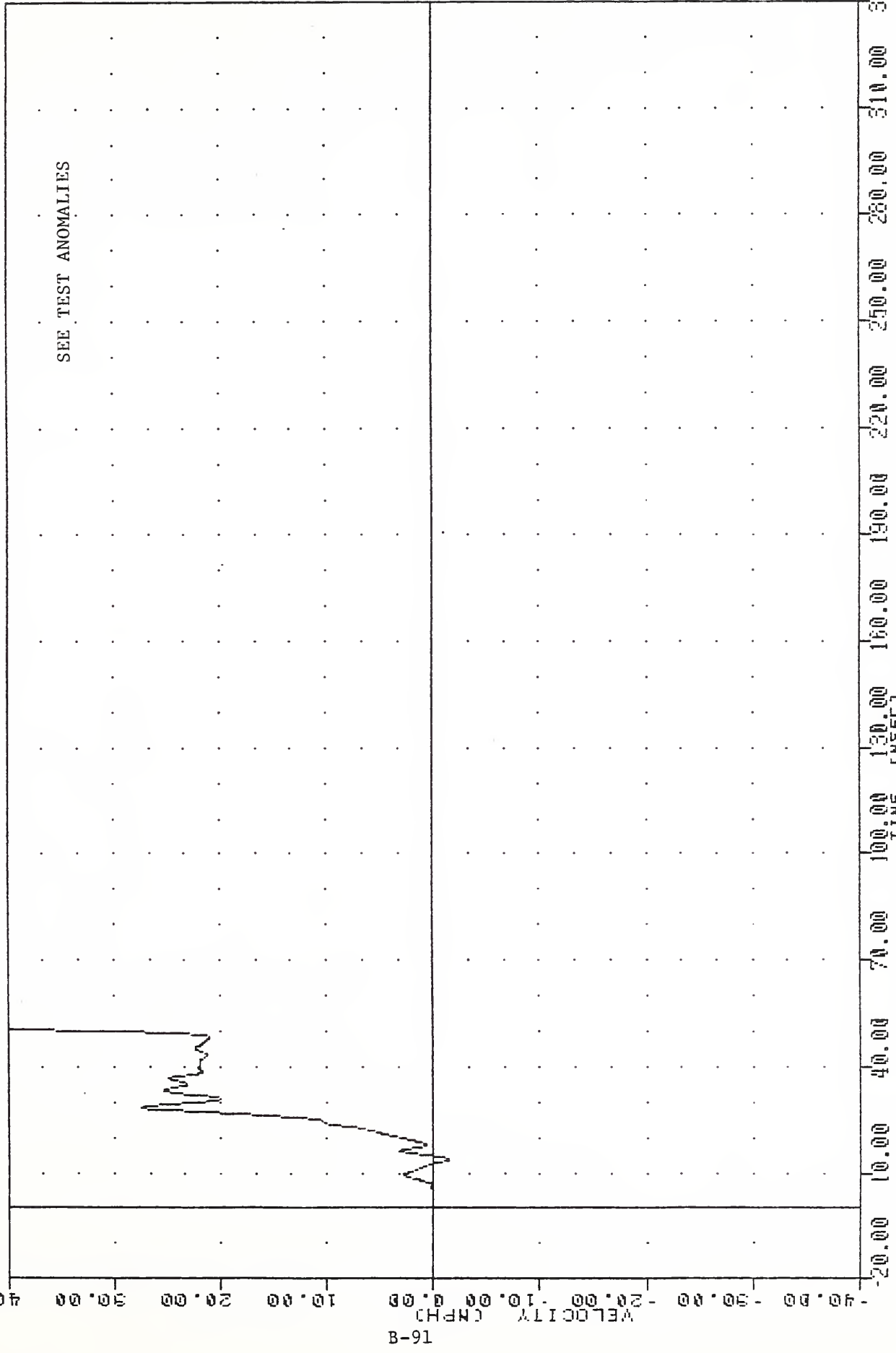
FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -28.49% 14.63, 741.97 @ 80.63



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE LEFT FRONT SILL ACCELERATION Y AXIS

TAC 841109
 SIDE AGGRESSIVE ATTRIBUTES
 24314000000
 LFSYV5
 FILTER = BLPF 300/ 949/ -40
 MIN. MAX VALUES = -1.438 13.75 3901.84 340.00
 PLOT DATE 15-NOV-84 15:53:17



SEE TEST ANOMALIES

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING LFSYV5

TRC , 841109 15-NOV-84 15:51:48

SIDE AGGRESSIVE ATTRIBUTES

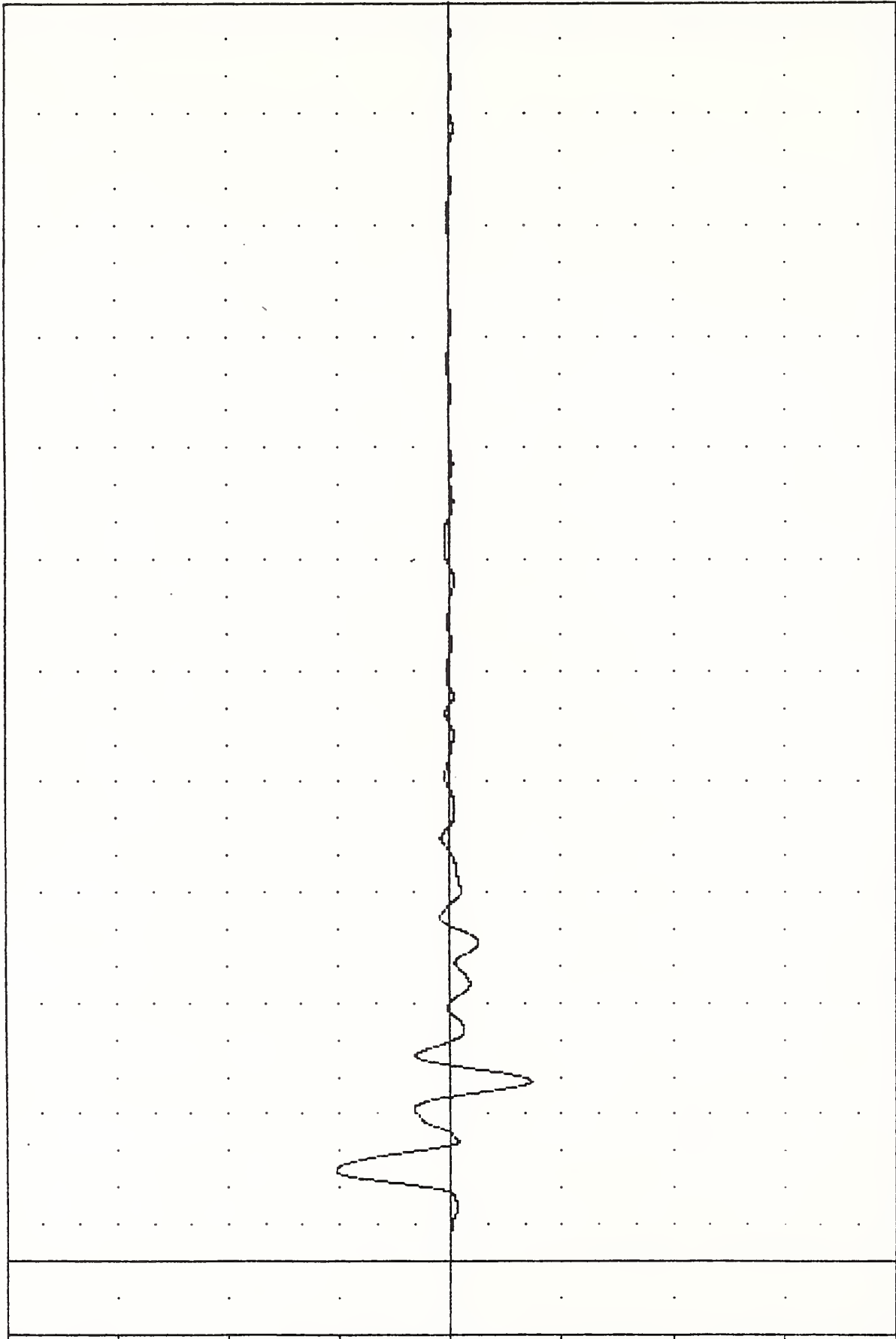
84314000000

LFDY61

FILTER = 8LPF 100/ 316/ -40

MIN, MAX VALUES = -108.98 48.75, 154.60 24.38

ACCELERATION (G) (X10²)



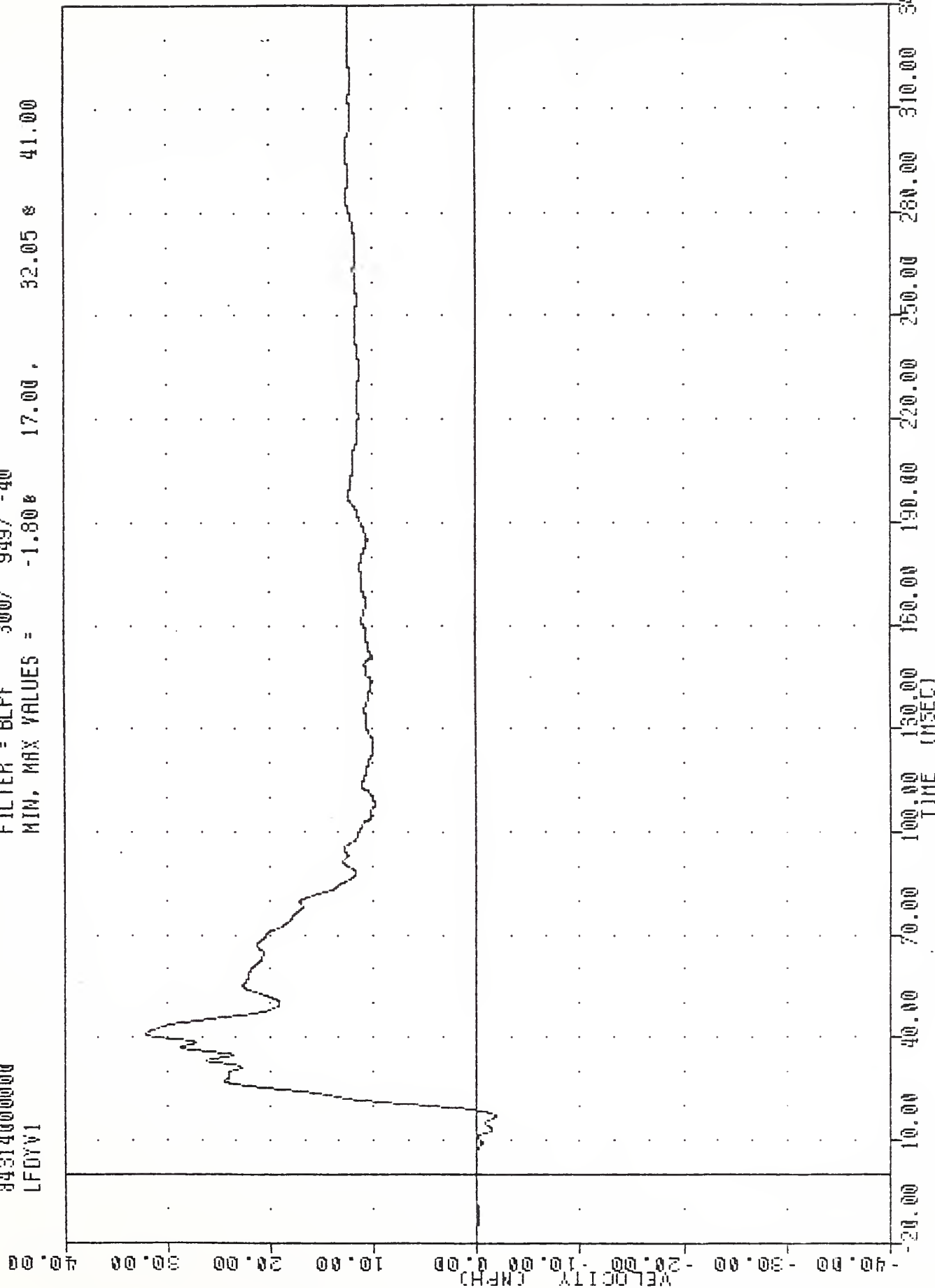
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE LEFT FRONT DOOR (POSITION 6) ACCELERATION Y AXIS

TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LFDYV1

PLUT DATE 15-NOV-84 15:53:17

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = -1.80 17.00 32.05 41.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING LFDYGI

TRC , 841109

PL01 DATE 15-NOV-84 15:51:48

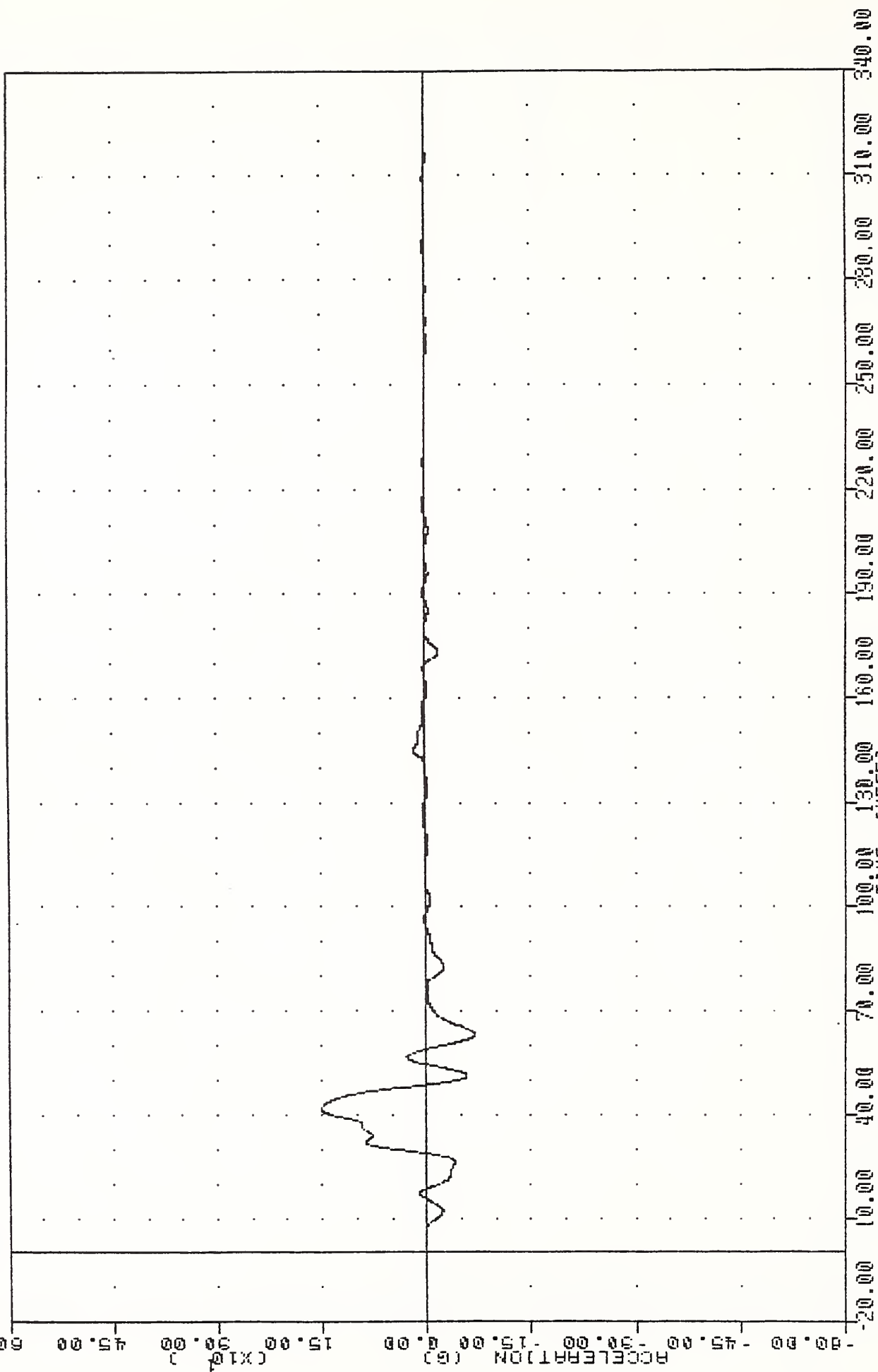
SIDE AGGRESSIVE ATTRIBUTES

843140000000

FILTER = BLPF 100/ 316/ -40

LFDY62

MIN, MAX VALUES = -68.760 63.13, 150.27 0 41.38



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE LEFT FRONT DOOR (POSITION 8) ACCELERATION Y AXIS

TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LF0YV2

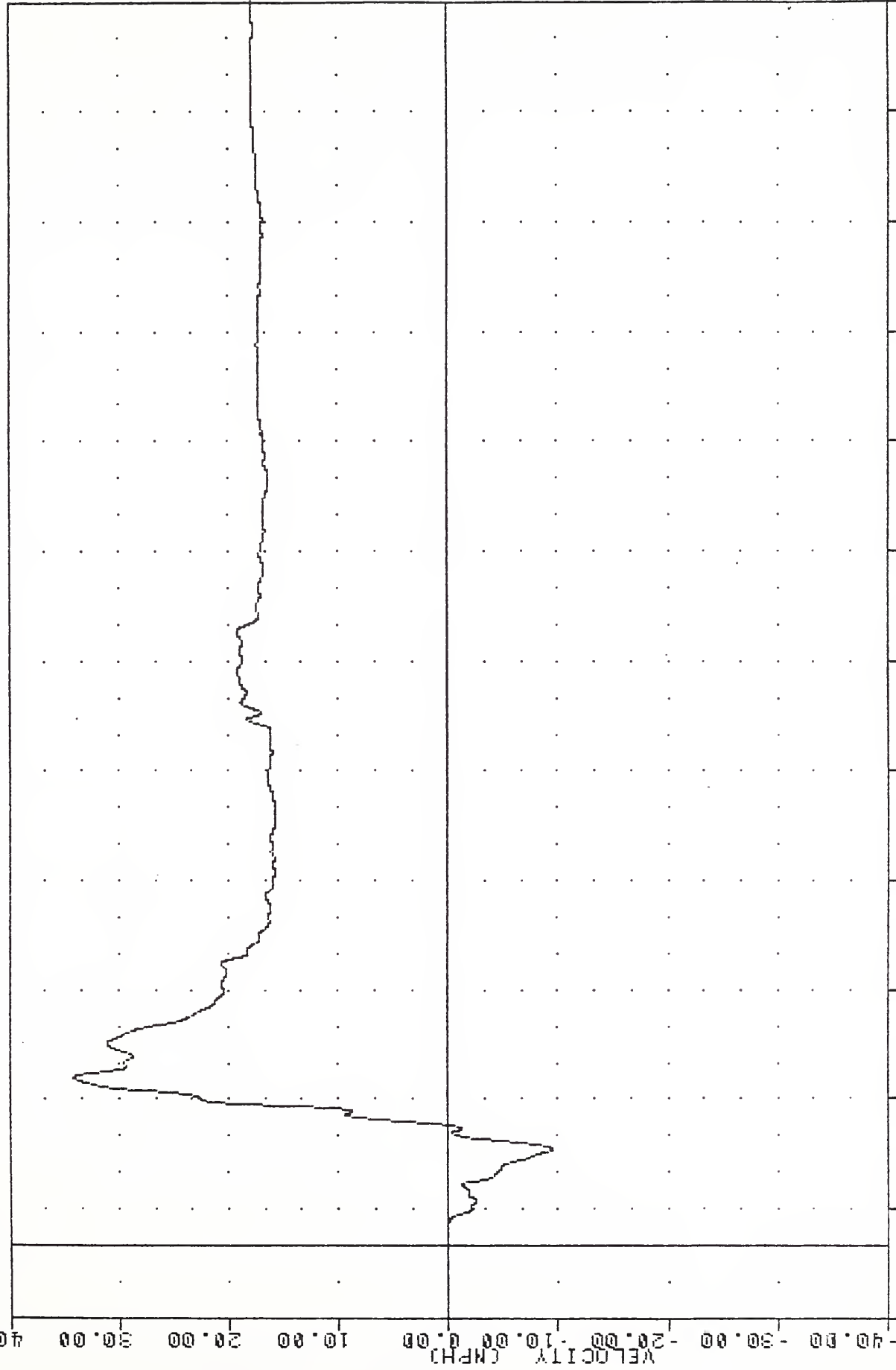
PL01 DATE 15-NOV-84 15:03:17

FILTER = BLFF 300/ 949/ -40

MIN. MAX VALUES = -9.55* 26.25 , 34.25 e 45.75

40.00
30.00
20.00
10.00
0.00
-10.00
-20.00
-30.00
-40.00

B-95



-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

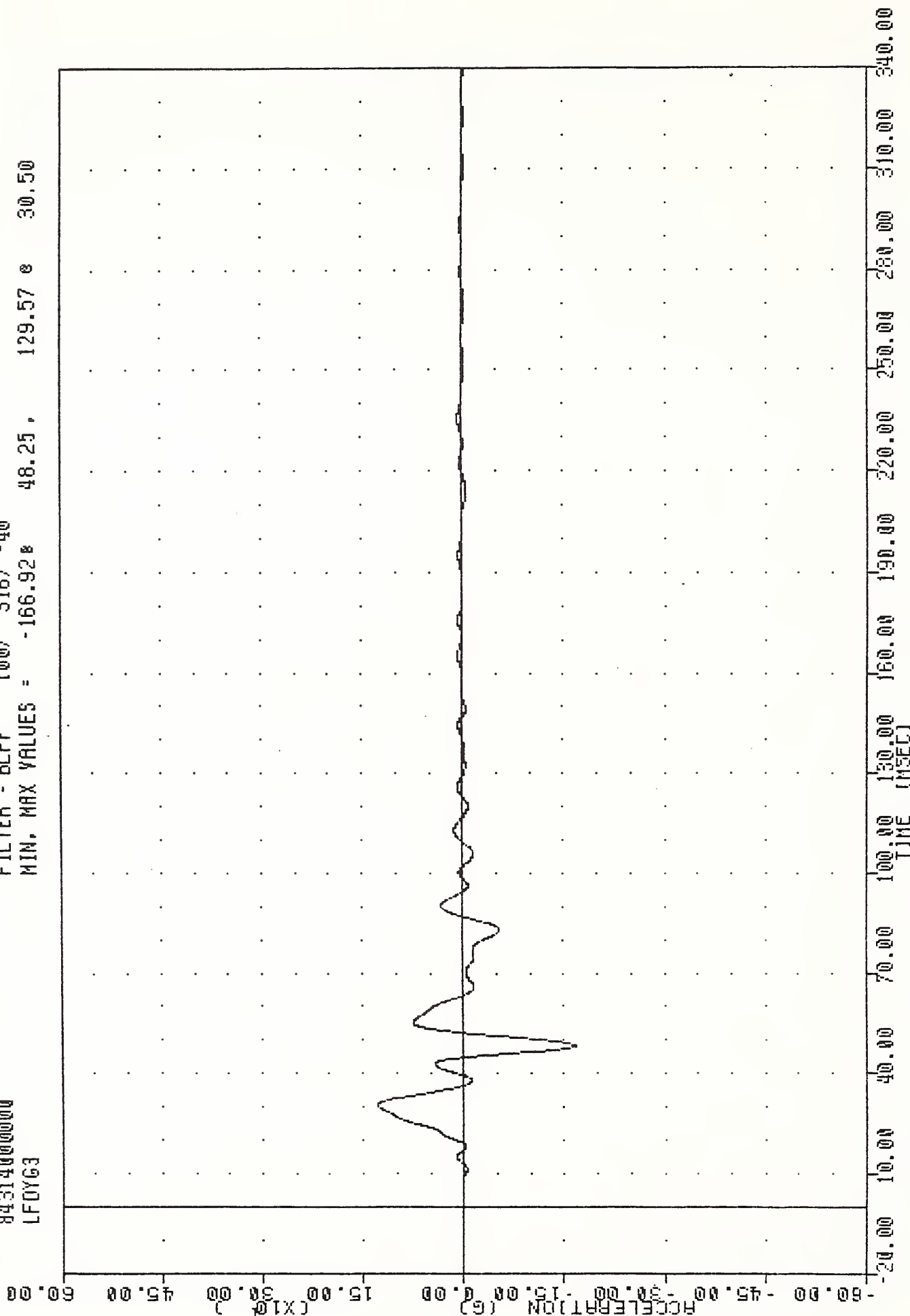
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING LF0Y62

TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LF0Y63

PLU1 DATE 15-NOV-84 15:51:48

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -166.92 48.25 129.57 30.50

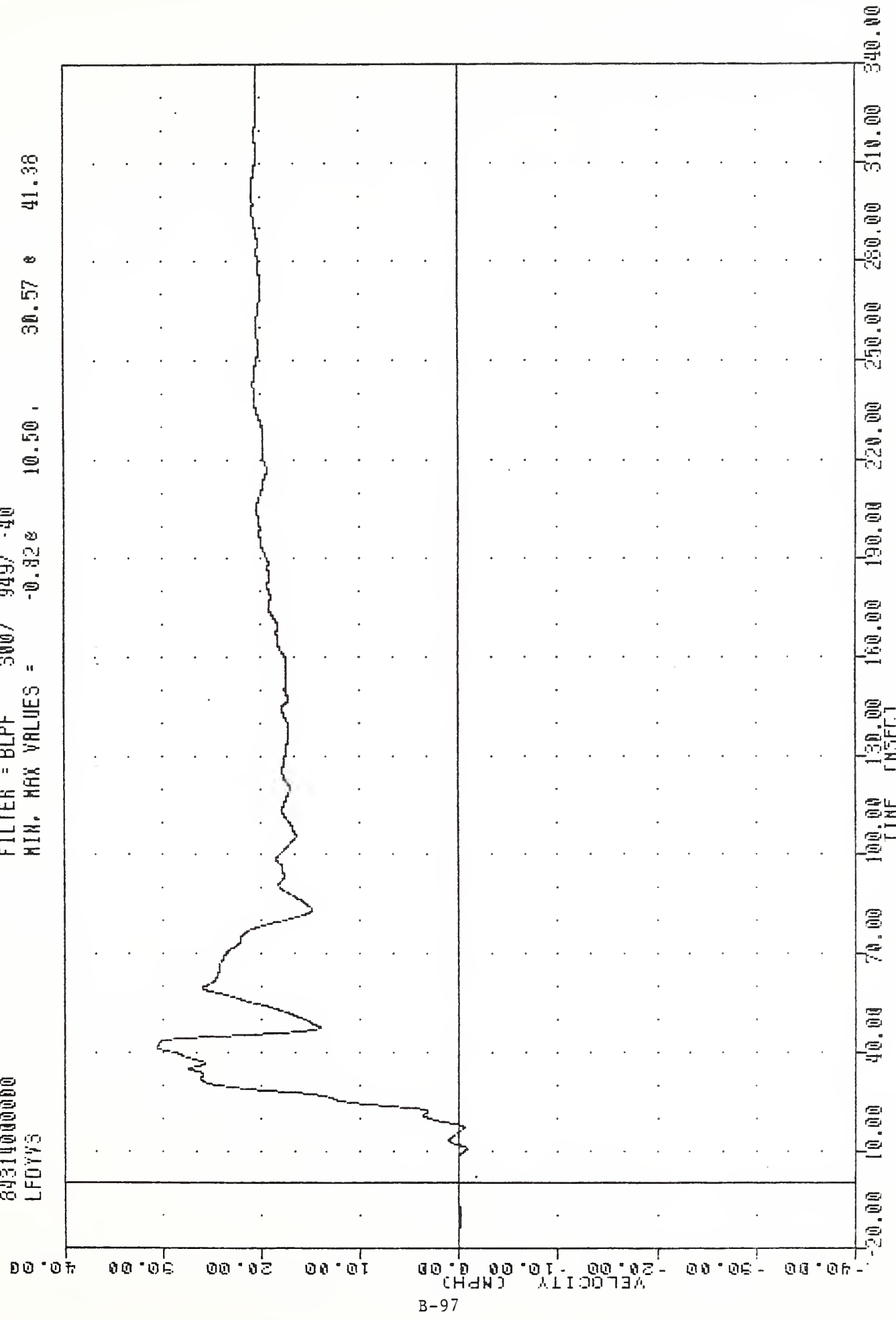


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE LEFT FRONT DOOR (POSITION 9) ACCELERATION Y AXIS

TAC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LFDYV3

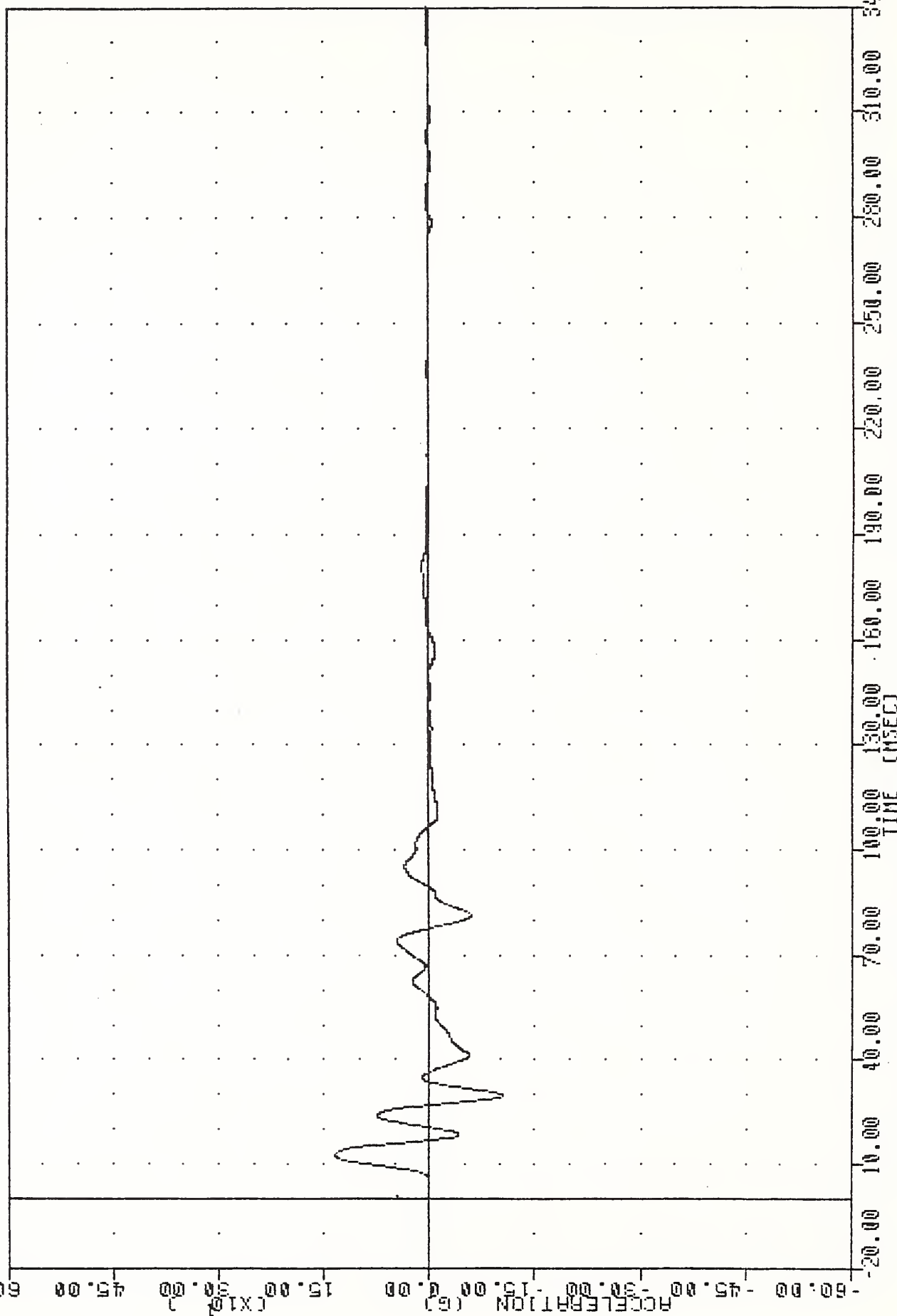
PL01 DATE 15-NOV-84 15:53:17

FILTER = BLPF 300/ 949/ -40
MIN. MAX VALUES = -0.828 10.50 , 30.57 & 41.38



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING LFDYV3

TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 LFOY64
 PLOT DATE 15-MAY-84 15:51:46
 FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = -103.90 29.63 , 133.25 12.50



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 VEHICLE LEFT FRONT DOOR (POSITION 10) ACCELERATION Y AXIS

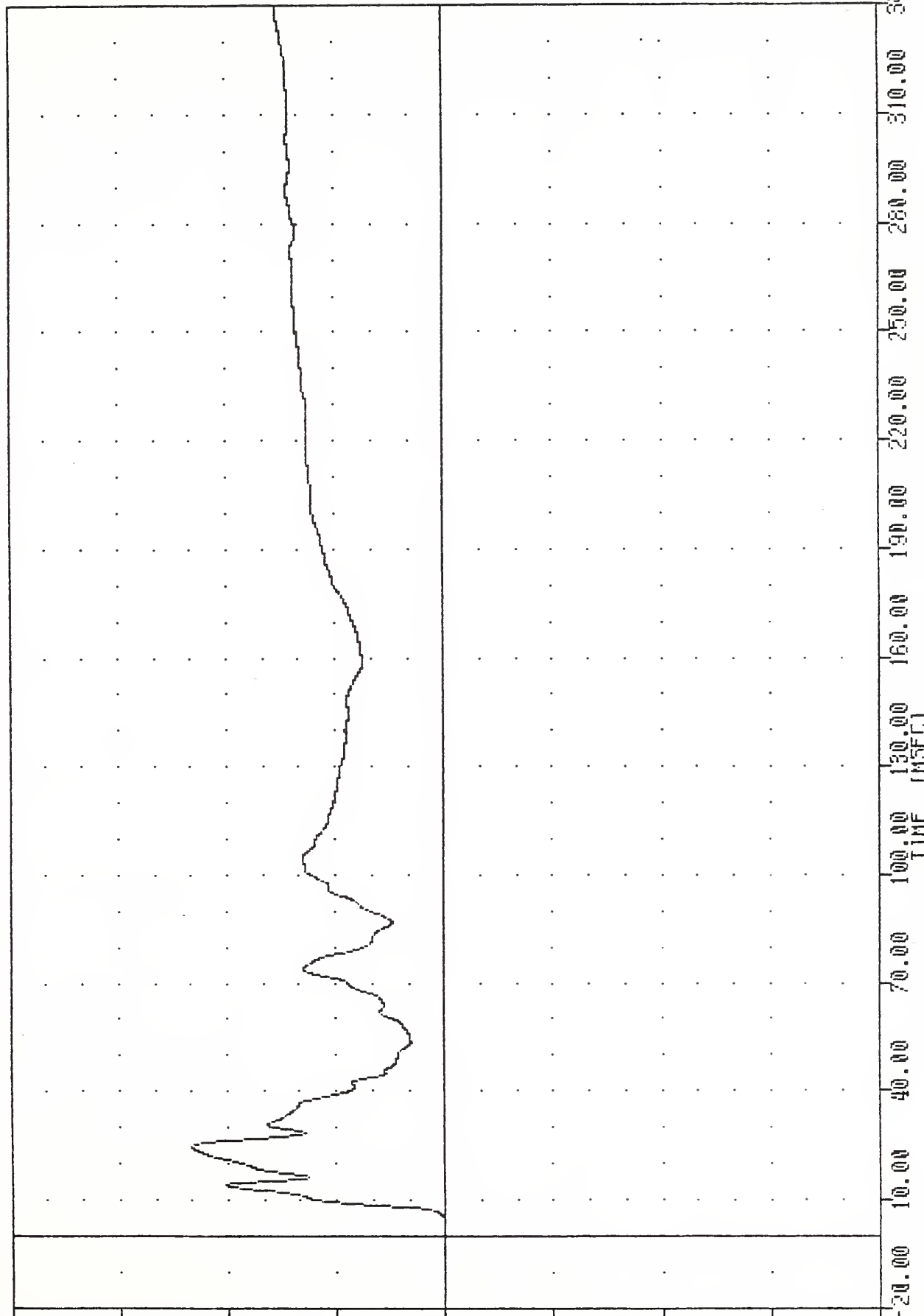
TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LFOYV4

PLOT DATE 15-MAY-84 15:53:17

FILTER = BLPF 300/ 949/ -40

MIN, MAX VALUES = -0.038 -17.00 , 23.36 24.63

66-8
VELOCITY (MPH)



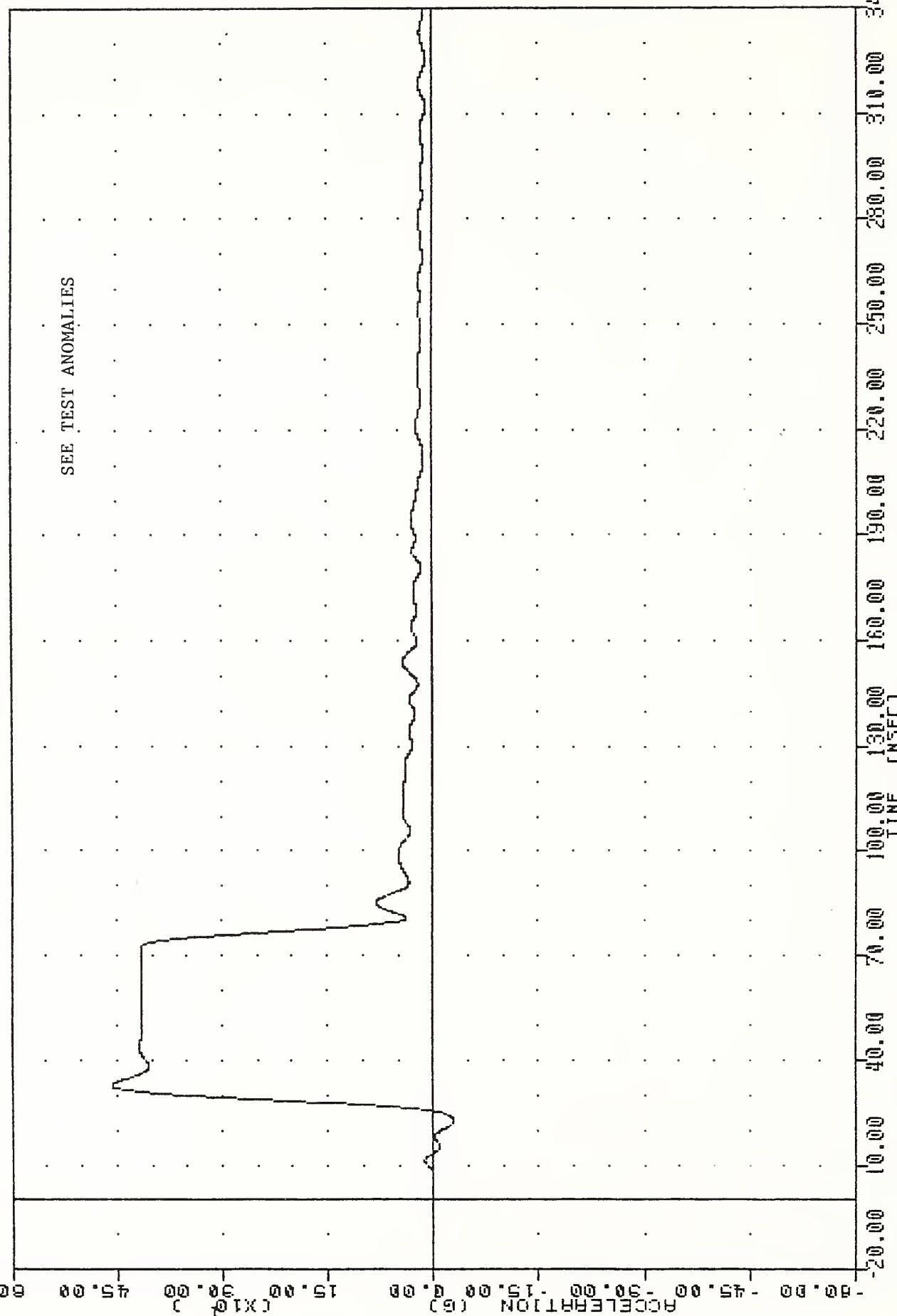
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING LFOY64

PL01 DATE 15-NOV-84 15:51:48

TAC 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LFDY65

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -28.100 22.50 457.23 32.63



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE LEFT FRONT DOOR (POSITION 11) ACCELERATION Y AXIS

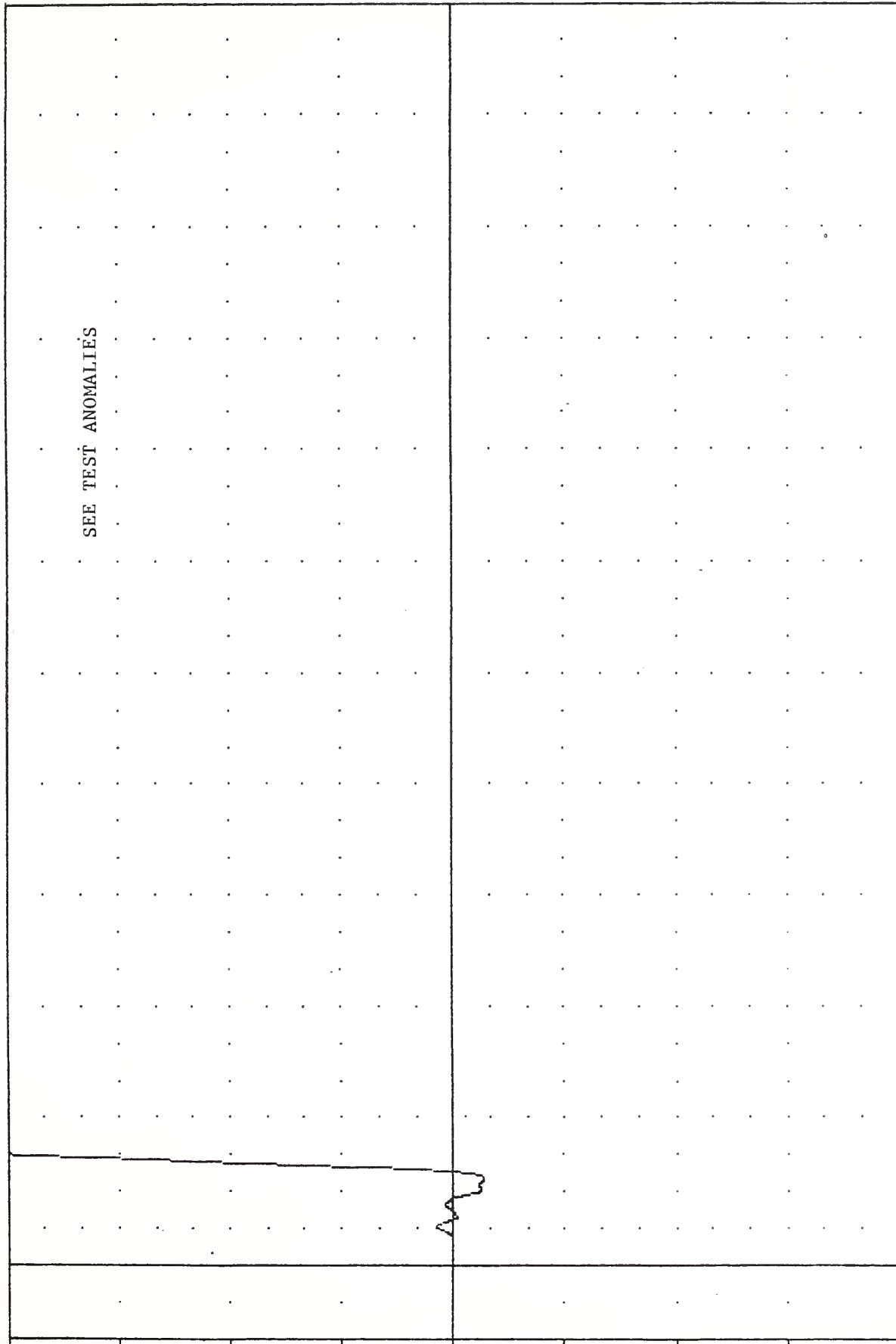
TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 LF0YV5

PL01 DATE 15-NOV-84 15:53:17

FILTER = 8LPF 300/ 949/ -40
 MIN. MAX VALUES = -2.71e 23.38 , 587.29 e 340.00

40.00
30.00
20.00
10.00
0.00
-10.00
-20.00
-30.00
-40.00

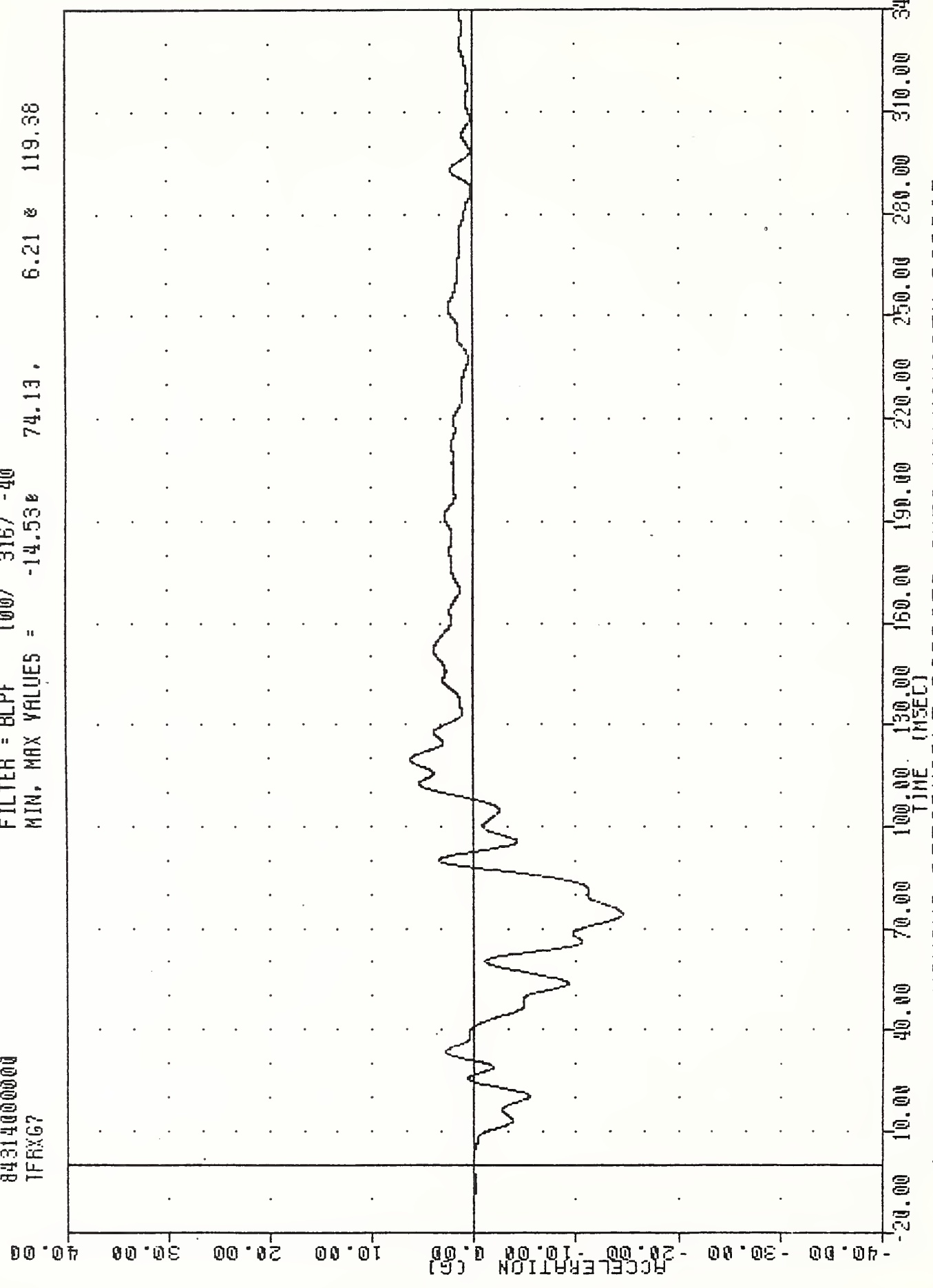
B-101



-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING LF0YV5

TRC , 841105
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 TFRXG7
 PLU1 DATE 15-MAY-84 13:51:48
 FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = -14.53 74.13, 6.21 & 119.38



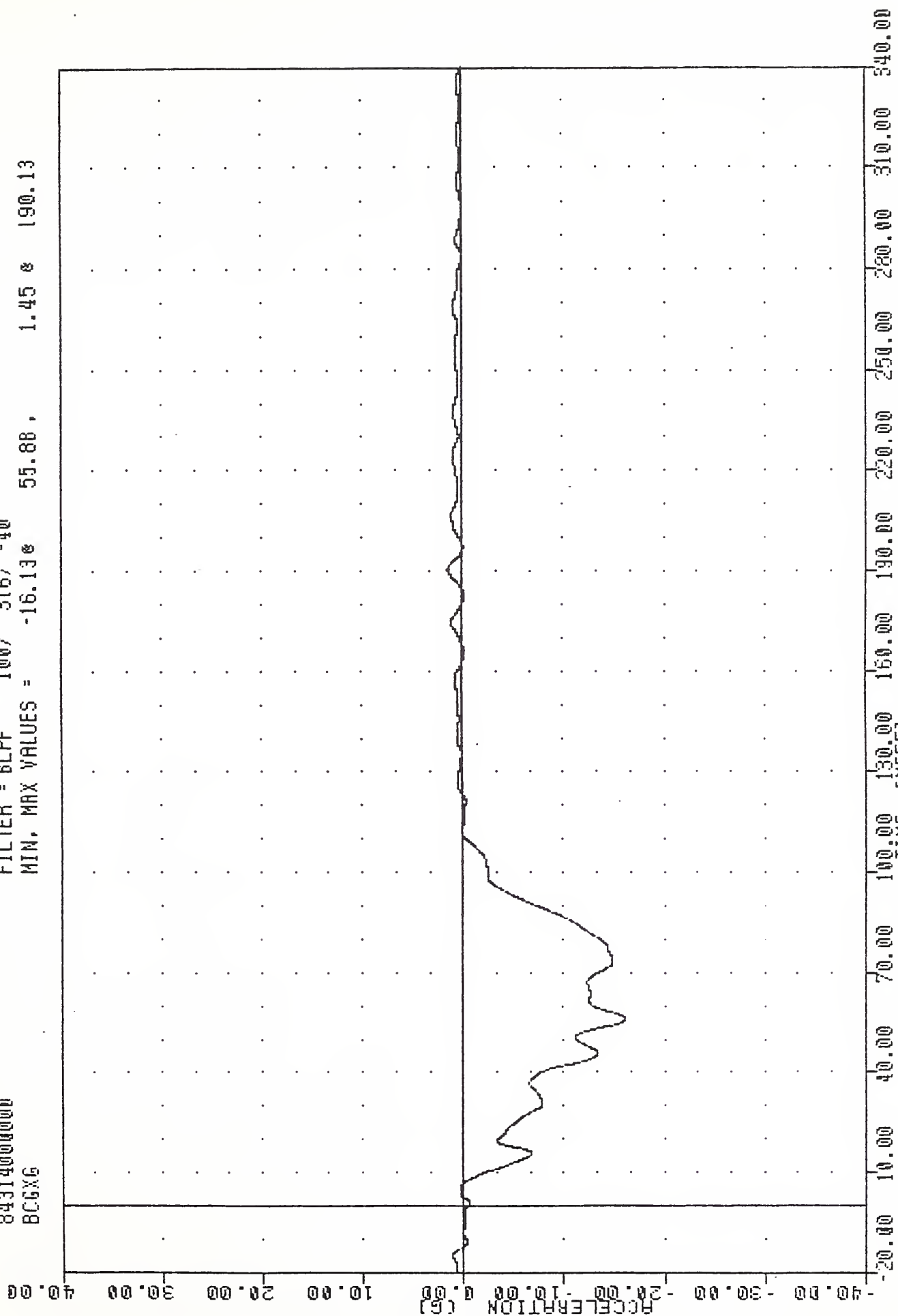
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 VEHICLE TRUNK FLOOR RIGHT ACCELERATION X AXIS

TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 BCGXG

PL01 DATE 15-NOV-84 15:01:48

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = -16.13e 55.88, 1.45 e 190.13

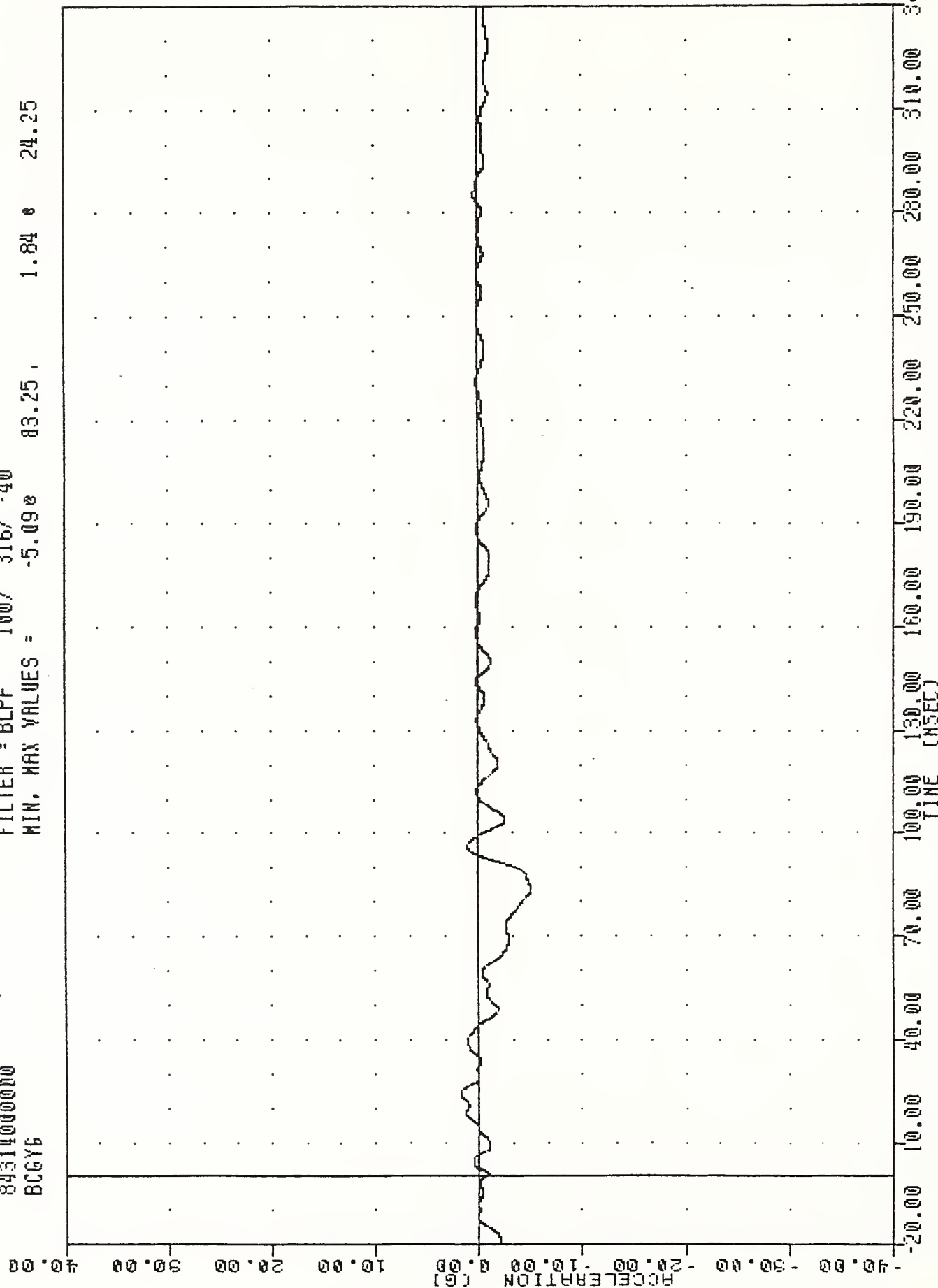


PL01 DATE 15-NOV-84 15:51:48

TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
BCGY6

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -5.098 83.25 , 1.84 24.25



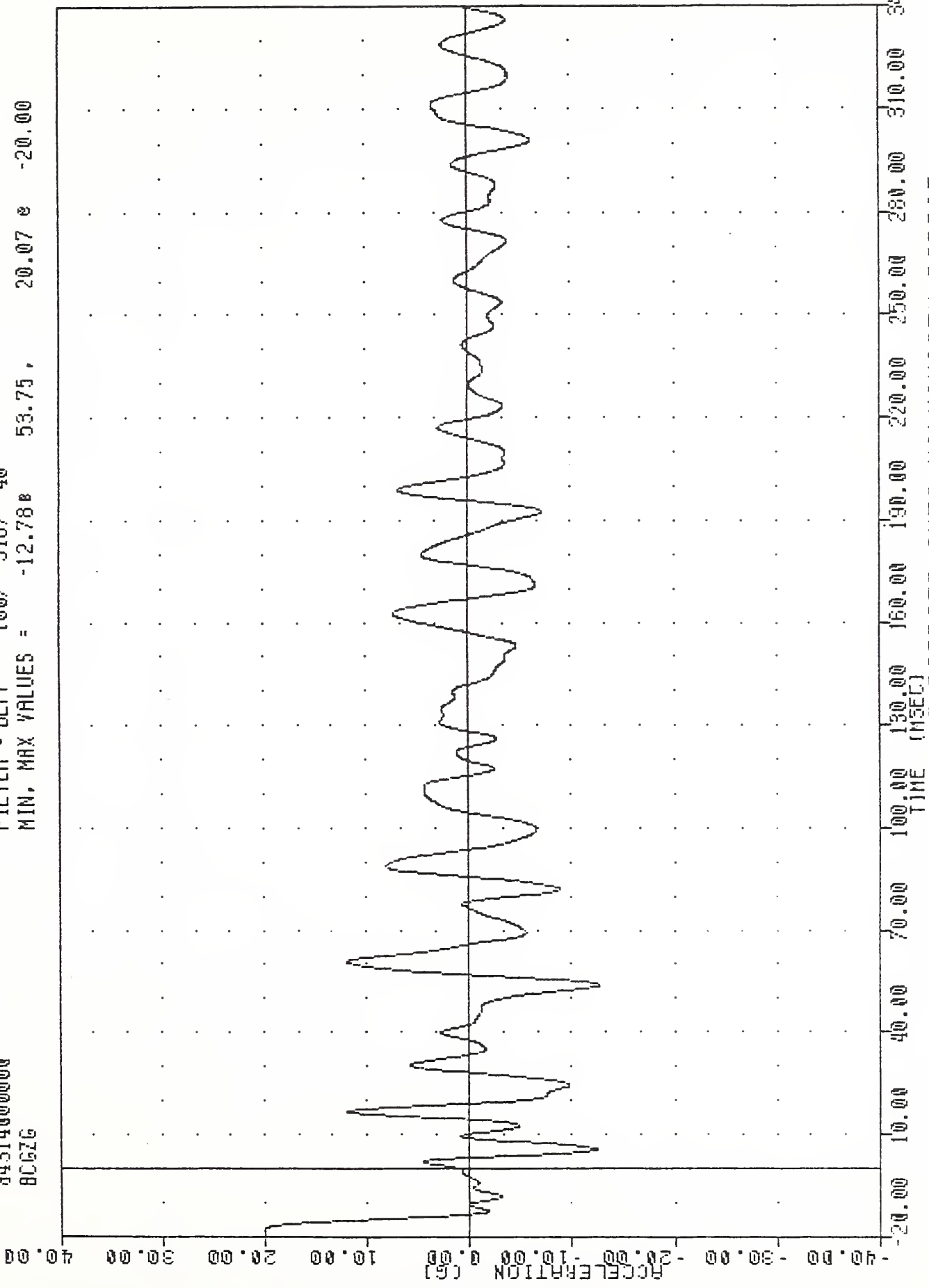
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
BARRIER CENTER OF GRAVITY Y AXIS

TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
BCGZG

PLOT DATE 15-NOV-84 15:51:48

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = -12.78 53.75, 20.07 e -20.00

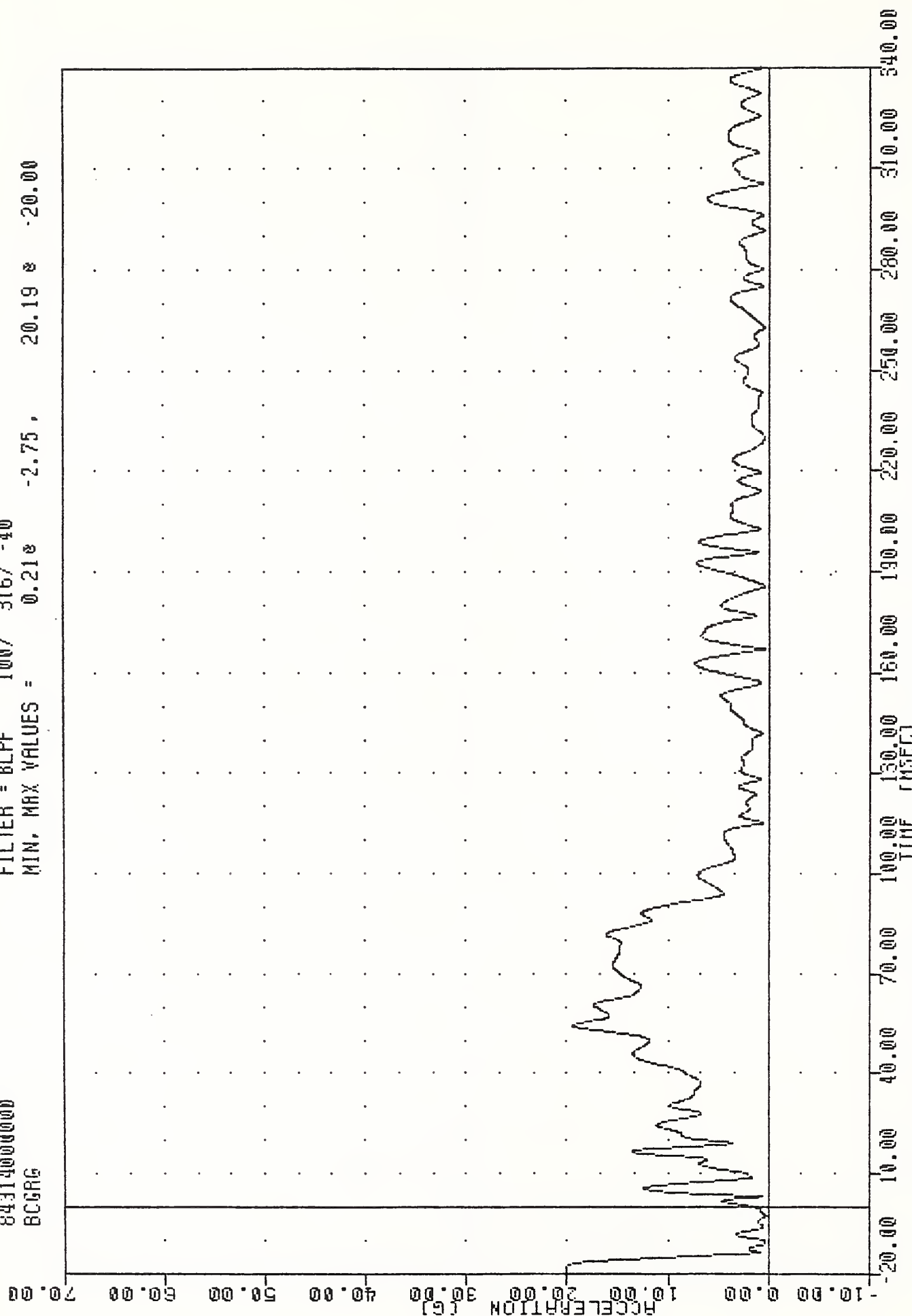


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
BARRIER CENTER OF GRAVITY Z AXIS

TRC , 841109

FLUI DATE 15-NOV-84 15:51:48
SIDE AGGRESSIVE ATTRIBUTES
84314000000
BCGRG

FILTER = BLPF 100/ 316/ -40
MIN. MAX VALUES = 0.21e -2.75 , 20.19 e -20.00

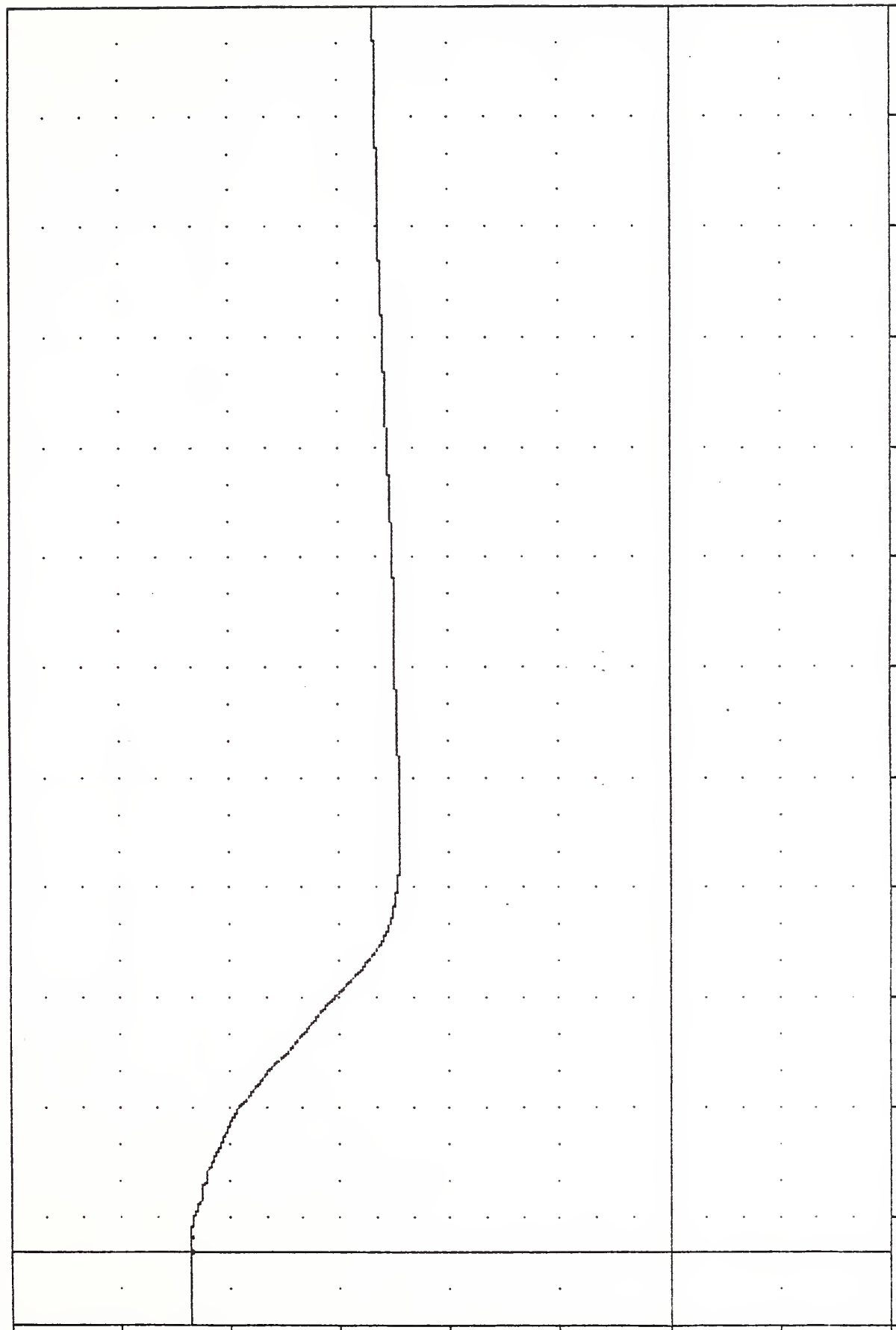


TAC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 BCGXV

PLOT DATE 15-NOV-84 15:53:17

FILTER = BLPF 300/ 949/ -40
 MIN, MAX VALUES = 24.49e 120.13, 43.65 e 2.63

VELOCITY (MPH)



B-107

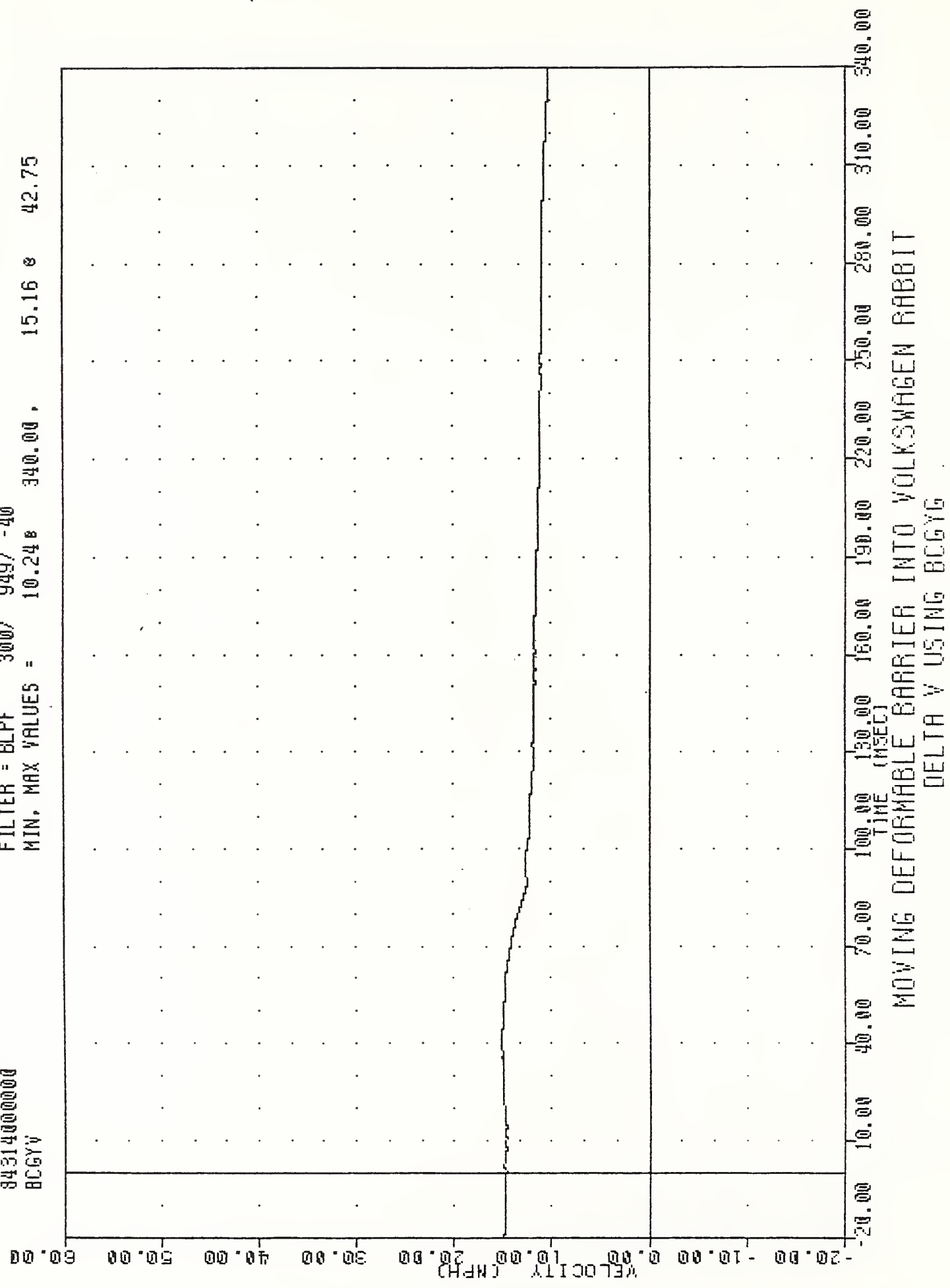
-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING BCGXG

PLOT DATE 15-NOV-84 15:53:17

TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
BCGYV

FILTER = BLPF 300/ 949/ -40
MIN, MAX VALUES = 10.248 340.00 , 15.16 42.75

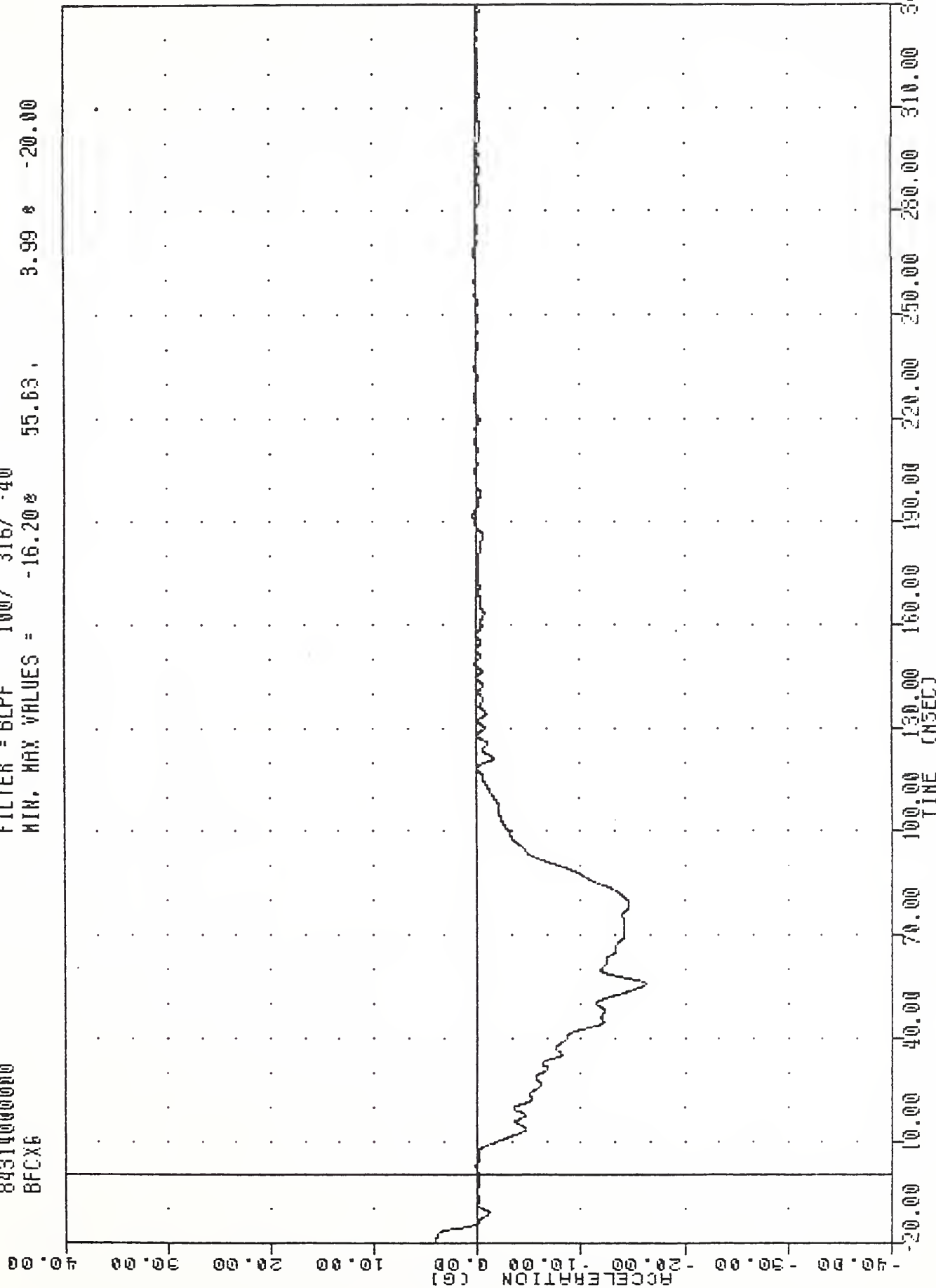


TAC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
BFCXB

PLOT DATE 15-NOV-84 15:51:46

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -16.20 55.63 3.99 -20.00



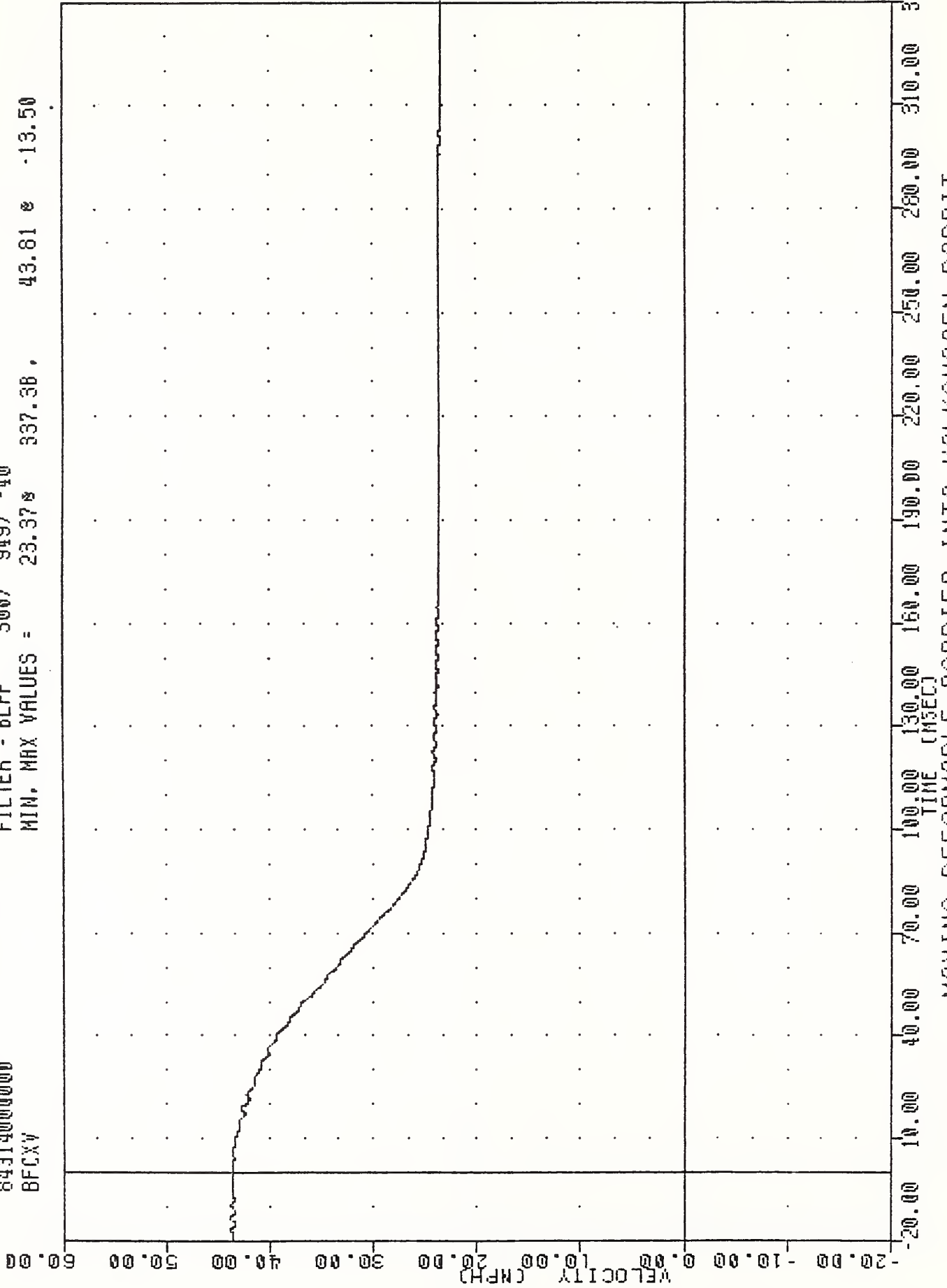
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
BARRIER FRONT CROSSMEMBER ACCELERATION X AXIS

TRL 541109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 BFCXV

PLU1 DATE 15-NOV-84 15:53:17

FILTER = BLPF 300/ 949/ -40

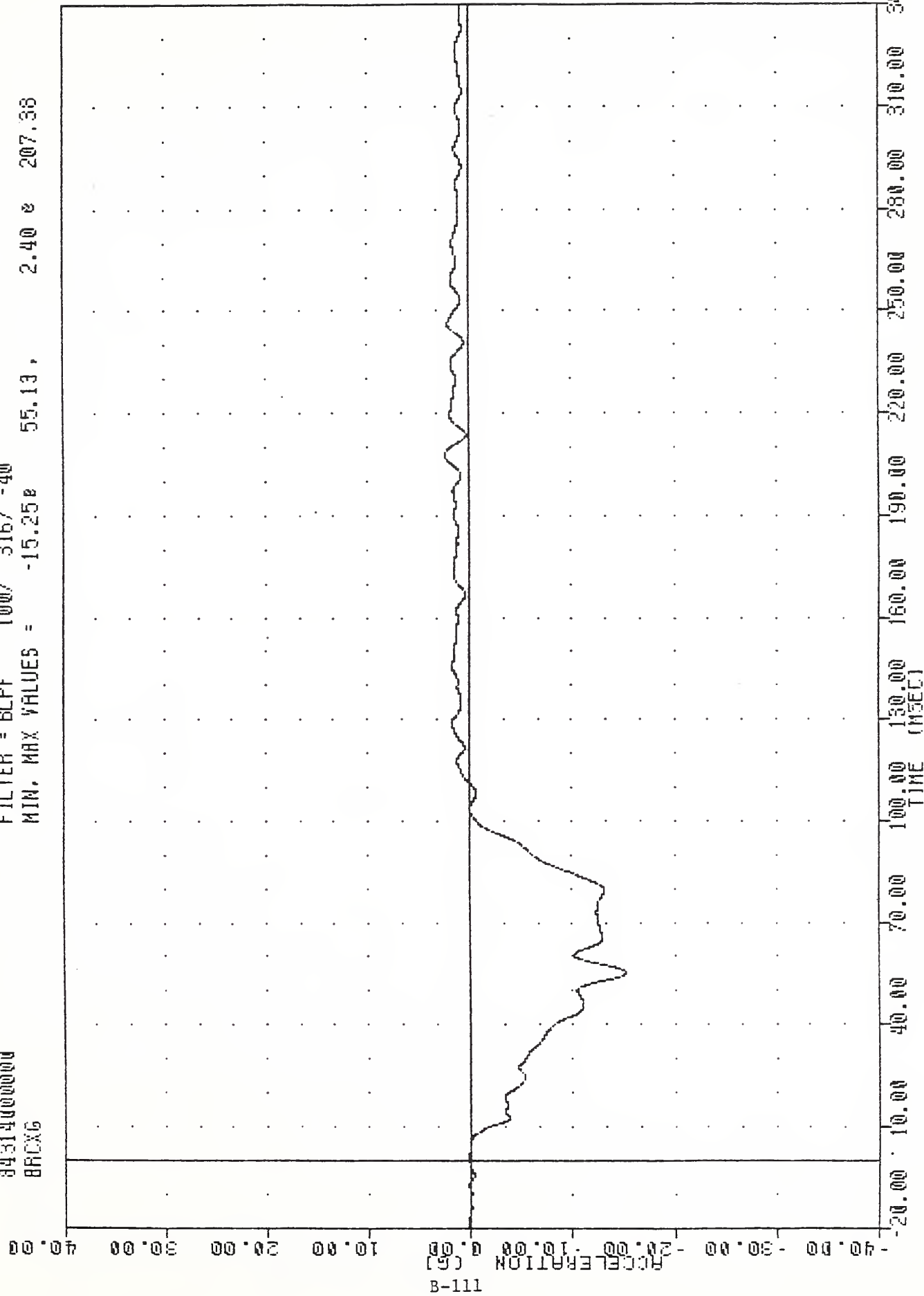
MIN, MAX VALUES = 23.378 337.38, 43.81 43.81 13.50



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING BFCXG

TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
BRXG

PLOT DATE 15-NOV-84 15:51:48
FILTER = BLPF 100/ 316/ -40
MIN. MAX VALUES = -15.25e 55.13, 2.40 e 207.38



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
BARRIER REAR CROSSMEMBER ACCELERATION X AXIS

TAC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 BRXXV

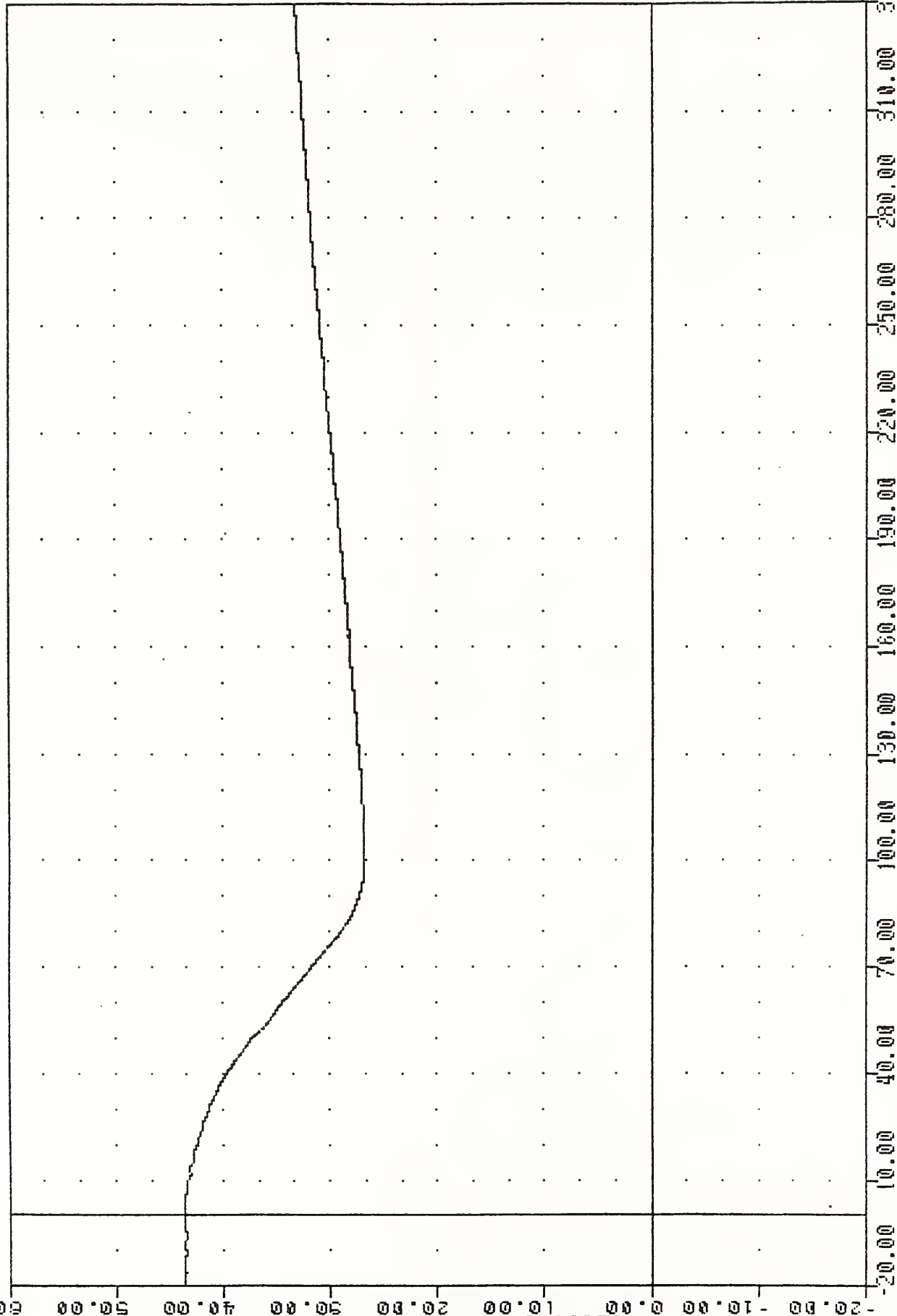
PLOT DATE 15-NOV-84 15:53:17

FILTER = BLPF 300/ 949/ -40

MIN, MAX VALUES = 26.79e 108.13 , 43.54 e -8.63

VELOCITY (MPH)

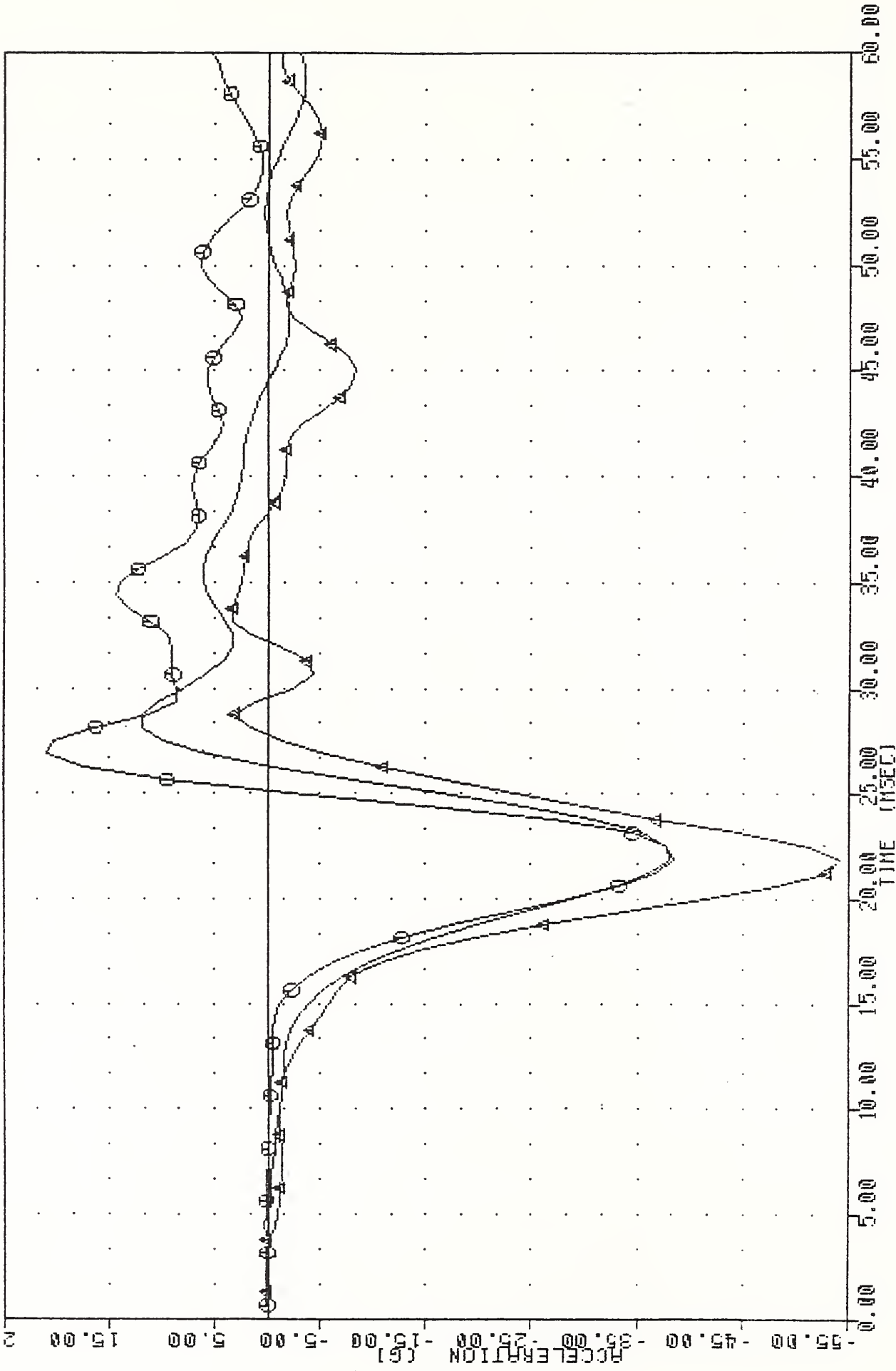
B-112



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING BRXXG

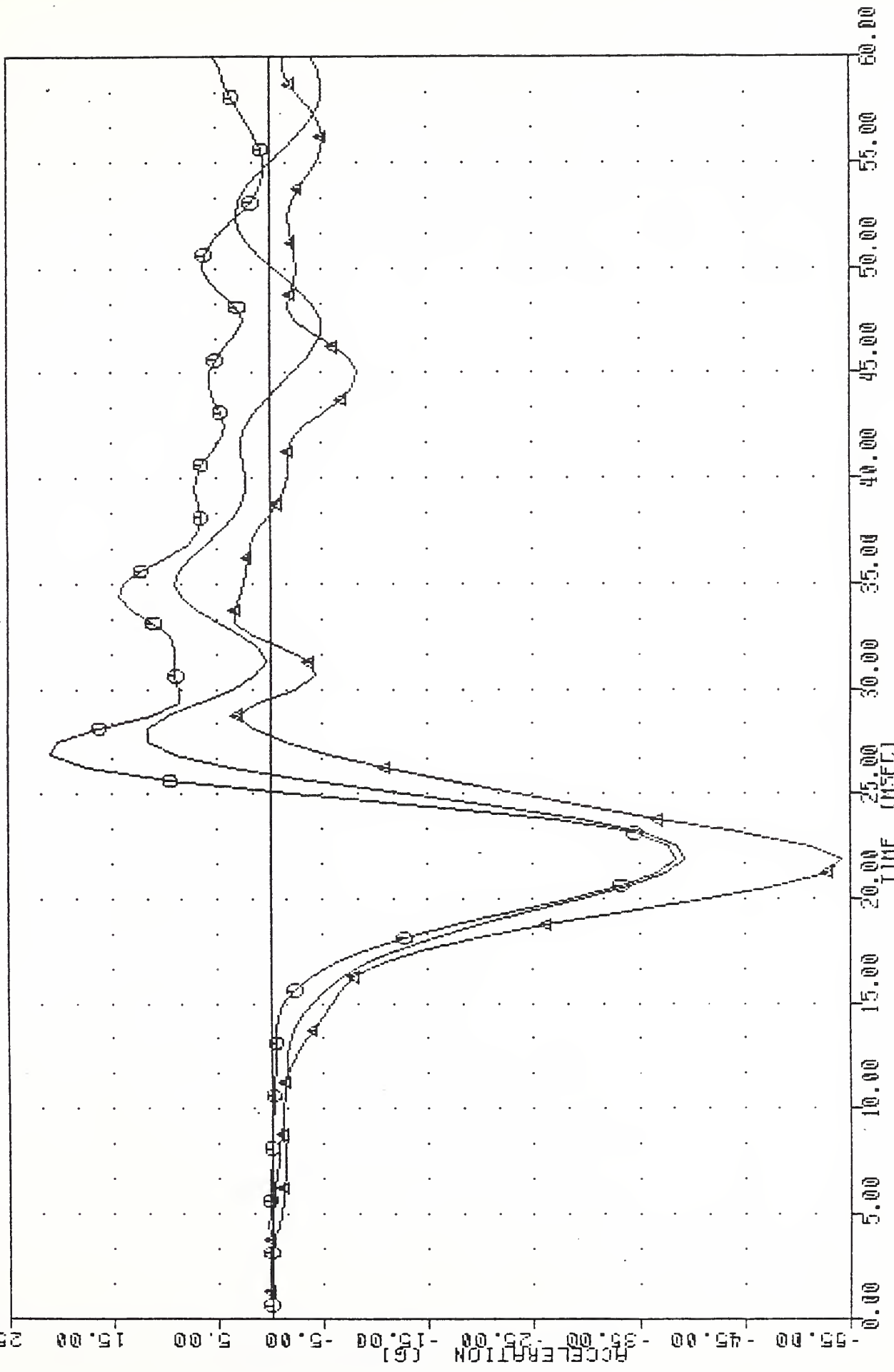
APPENDIX C
DUMMY CERTIFICATION

JTC 92 100 4 310 16 3 AL1 86 PL 27 15 13
 LURYGI FILTER = HSRI 136/ 189/ -50 MIN. MAX = -38.02 21.25 27.50
 MN-250 0 FILTER = HSRI 136/ 189/ -50 MIN. MAX = -38.44 21.25 26.25
 MN-250 A FILTER = HSRI 136/ 189/ -50 MIN. MAX = -54.08 21.25 33.13



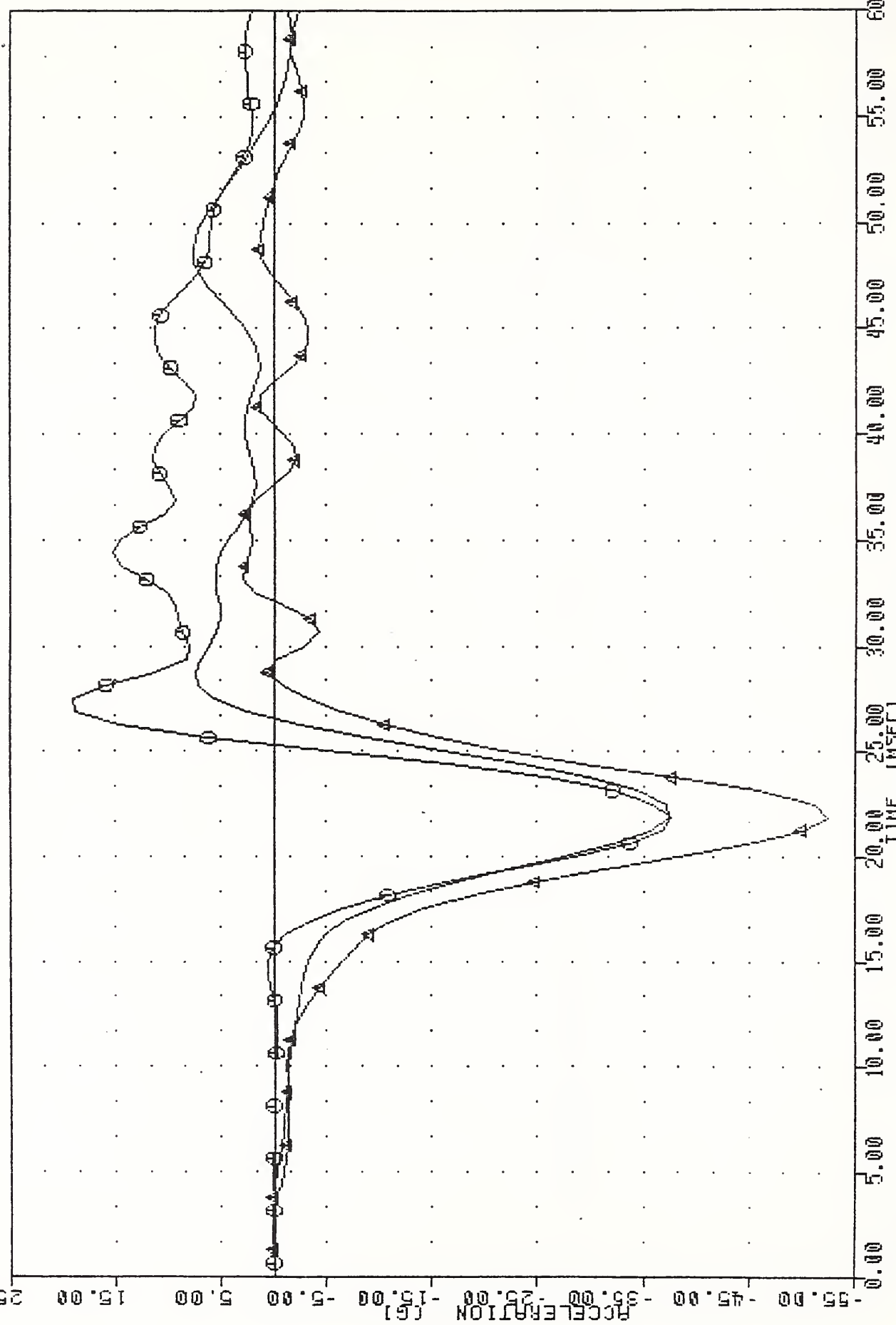
SIDE IMPACT TEST (006)
 LEFT UPPER RIB ACCELERATION Y AXIS - 1

DATE: 09-22 310 00JRA 316 L00 310 CAL112 84000 27 MAY 84 15.22:08
 FILTER: HSRI 136/ 189/ -50 MIN, MAX = -39.36 8 21.25 27.50
 MN-250 0 136/ 189/ -50 MIN, MAX = -38.44 8 21.25 26.25
 MN-250 A 136/ 189/ -50 MIN, MAX = -54.08 8 21.25 33.13



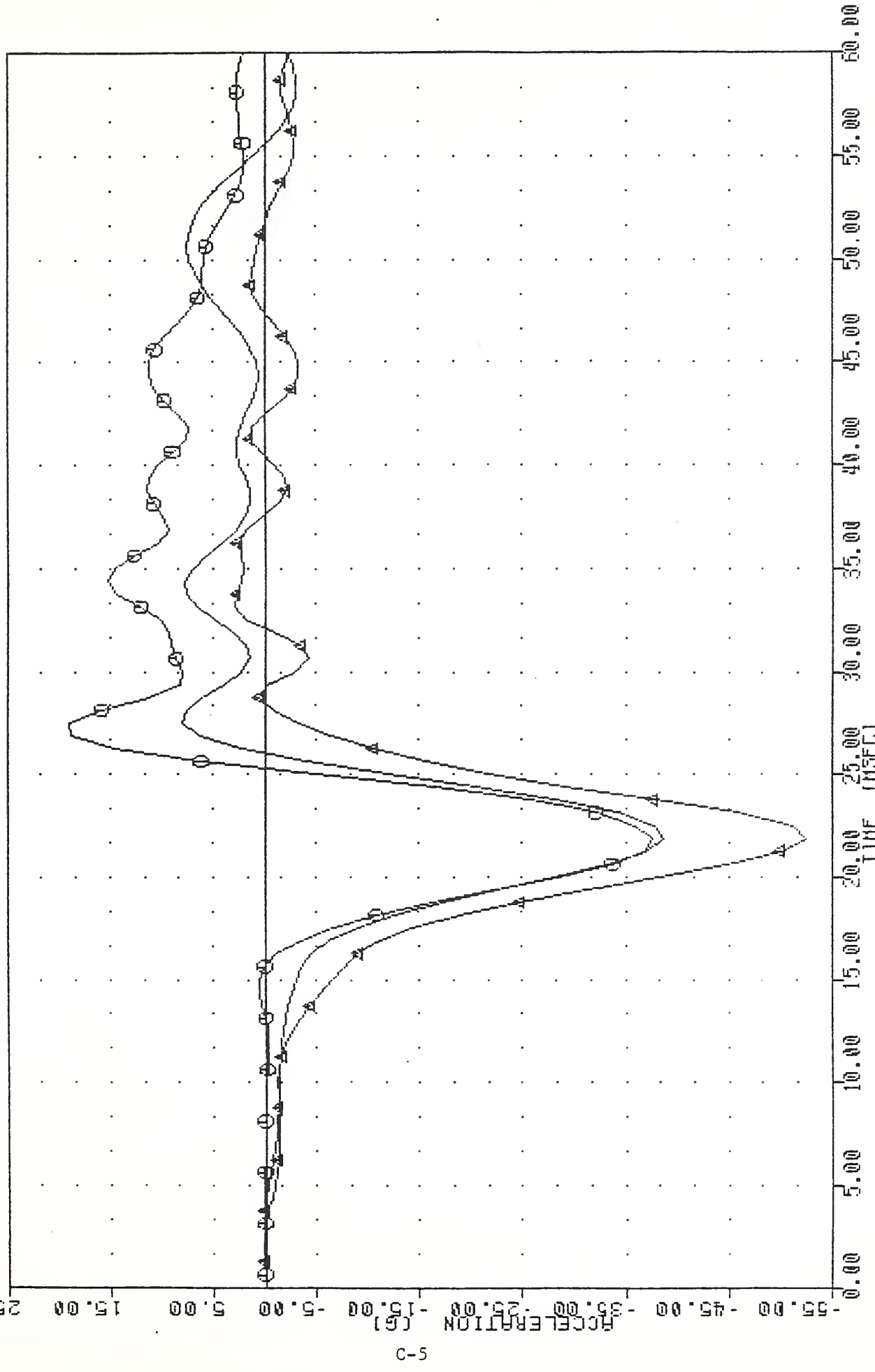
SIDE IMPACT TEST (0008)
 LEFT UPPER RIB ACCELERATION Y AXIS - A

JTC 92 4 310 JRA 16 L 3 JAL 8 PL 27 1-84 15:45
 LLRYGI FILTER: HSRI 136/ 189/ -50 MIN, MAX = -37.51 21.25, 48.13
 MN-250 0 FILTER: HSRI 136/ 189/ -50 MIN, MAX = -37.66 21.25, 26.87
 MN-250 A FILTER: HSRI 136/ 189/ -50 MIN, MAX = -52.52 21.25, 32.50

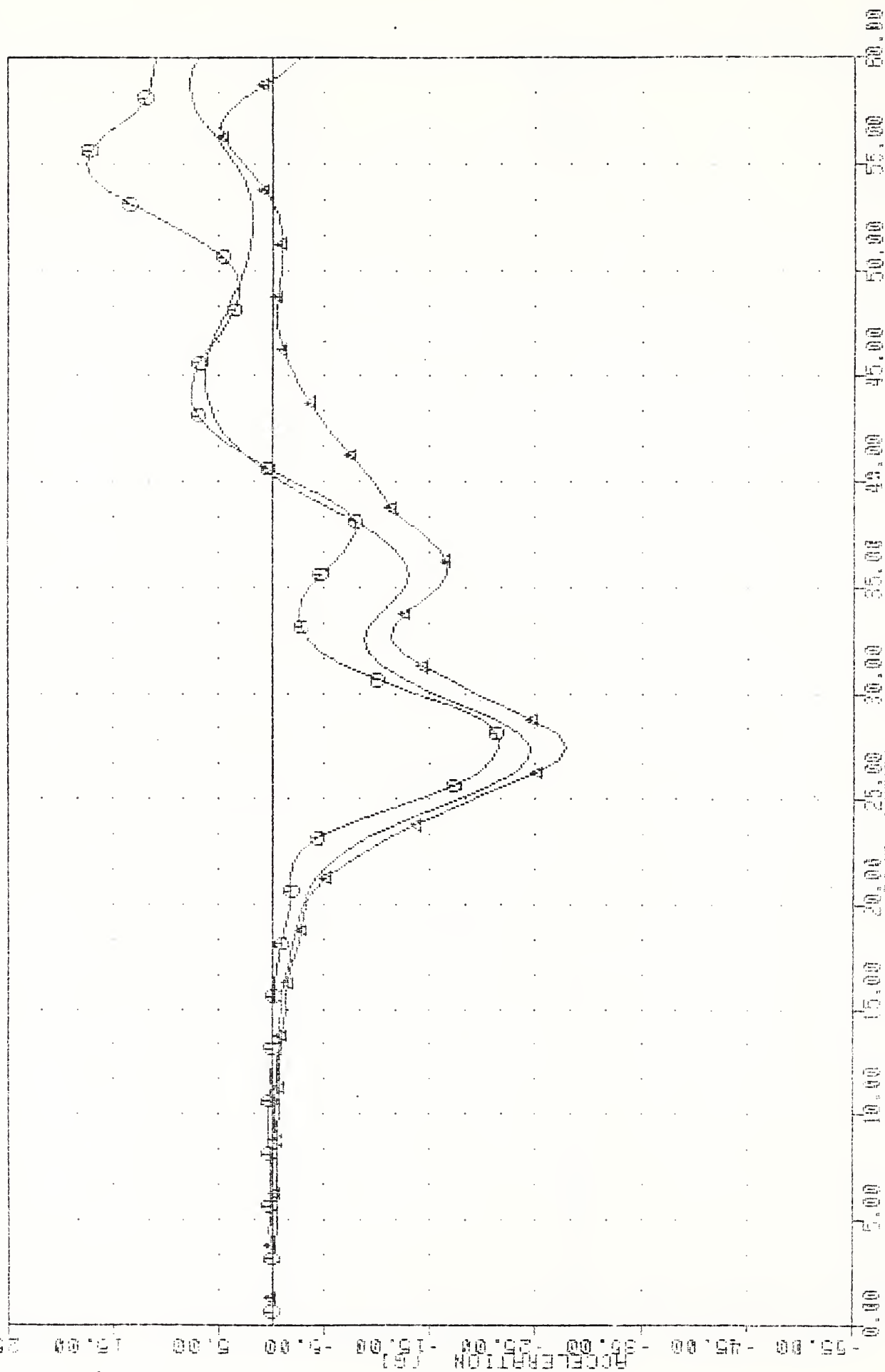


SIDE IMPACT TEST (006)
 LEFT LOWER RIB ACCELERATION Y AXIS - 1

VITE 30092 310 00368 306 L 310 CAL 27 27 15.00:54
 LLRYGA FILTER : HSRI 136/ 189/ -50 MIN, MAX = -38.74 0 7.930 26.87
 MN-250 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -37.66 0 19.000 26.87
 MN-250 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -52.52 0 2.940 32.50



SIDE IMPACT TEST (006)
 LEFT LOWER RIB ACCELERATION Y AXIS - A

[illegible][illegible]

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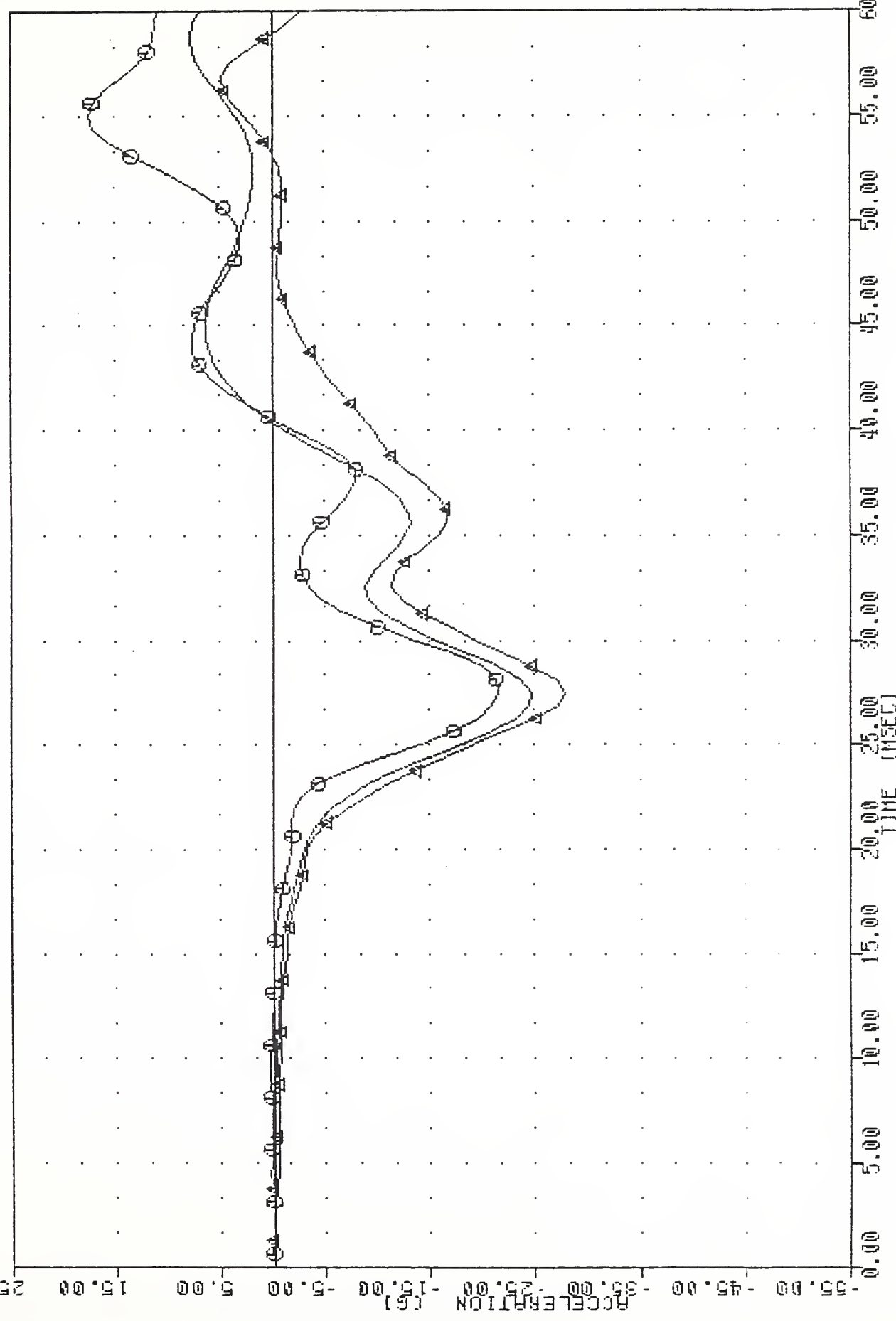
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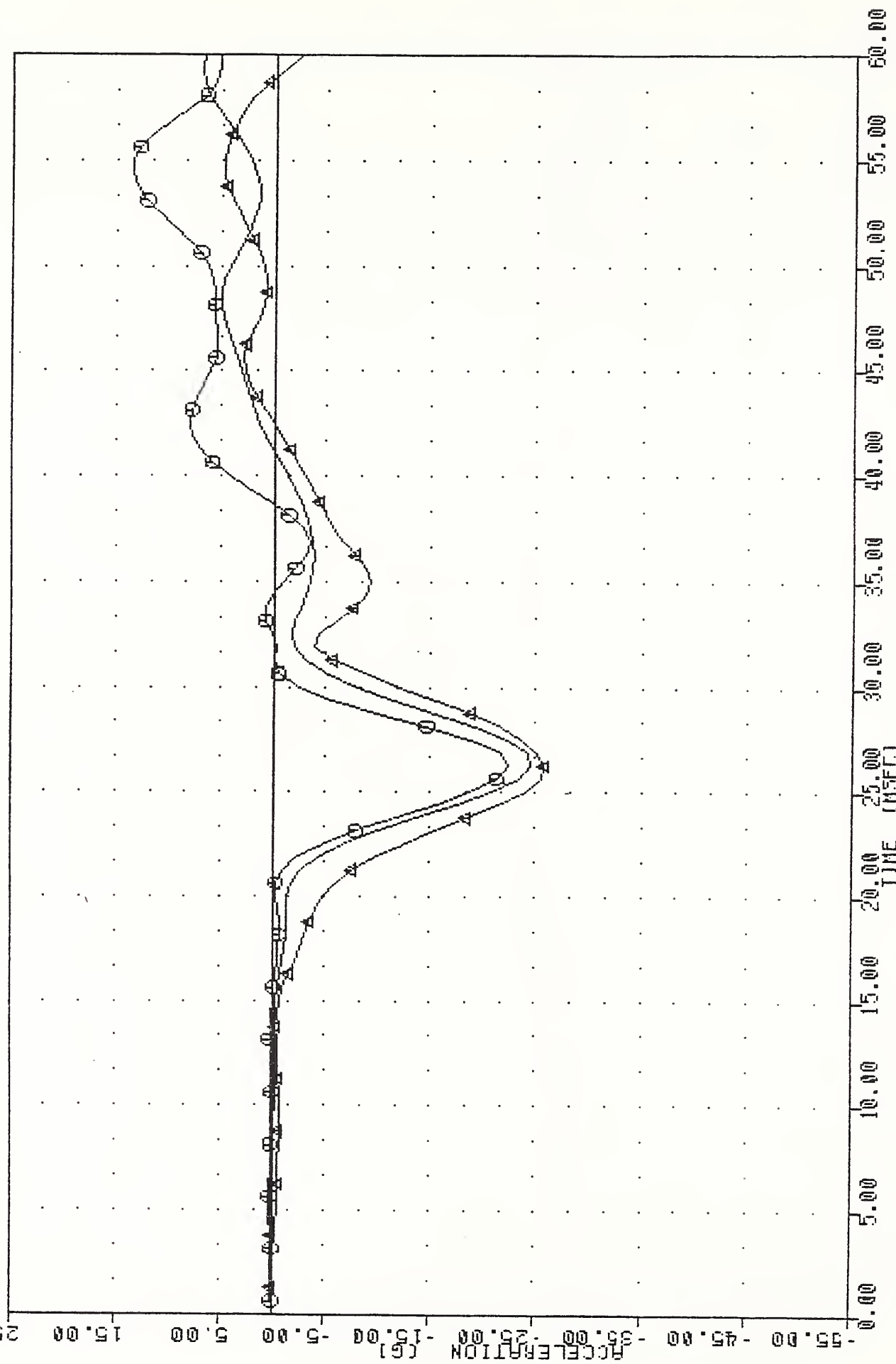
pa

WHIC SHL92 , S1006114 S10 THORAX WNB BUDDY 318 CAL114 84321 PLUI DATE 27-MUV-84 15:36:45
 TOIYGA FILTER : HSRI 136/ 189/ -50 MIN, MAX = -24.71 7.76 58.13
 MN-2SD 0 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -21.58 17.54 54.98
 MN-2SD 1 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -27.91 4.78 56.25



SIDE IMPACT TEST (006)
 UPPER SPINE ACCELERATION Y AXIS - A

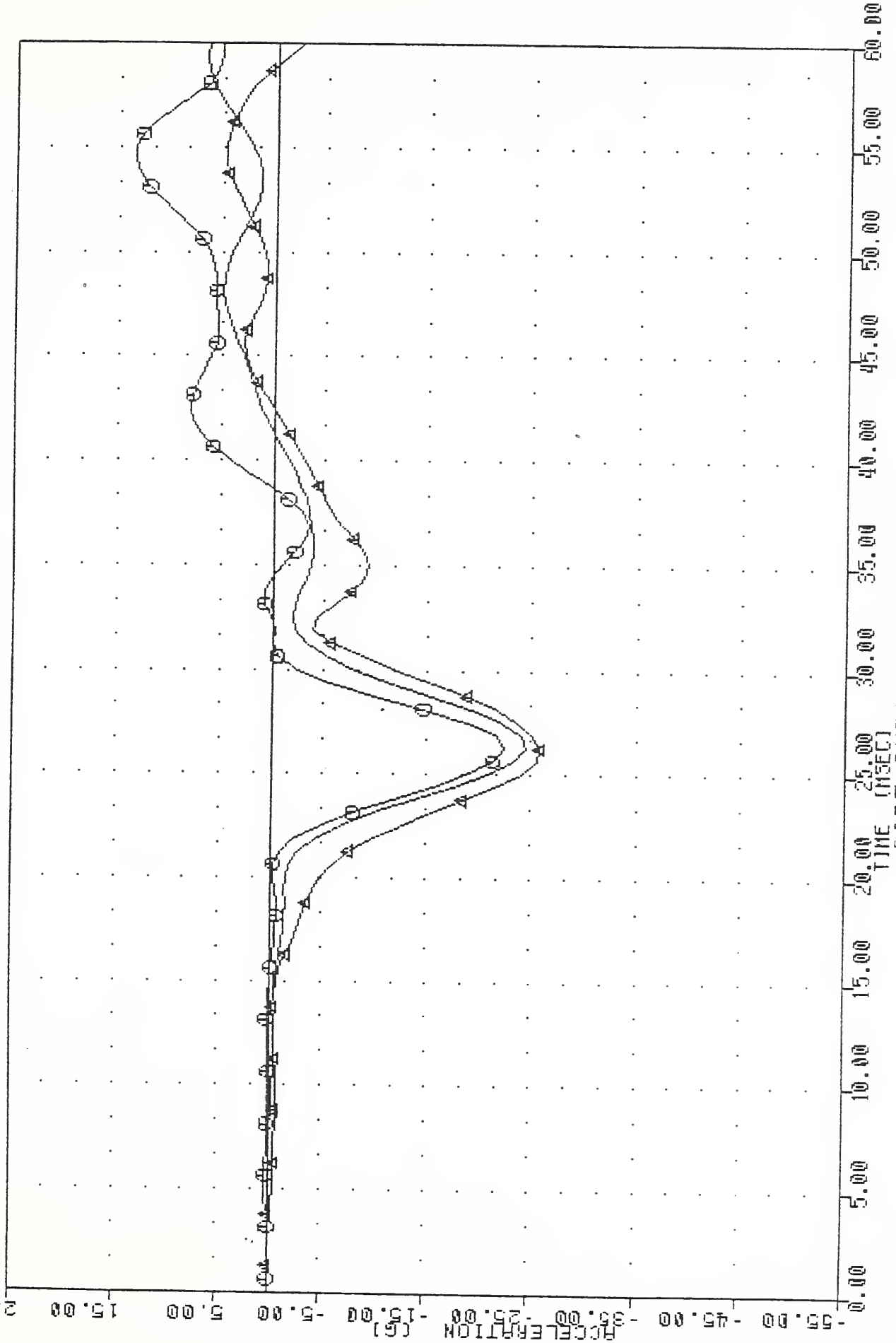
VHTC SRL92 • S1006114 SID 10URAX 0W6 BUUV 318 CAL114 84321 FLUI DATE 27-NOV-84 15:38:19
 T12YGI FILTER : HSRI 136/ 189/ -50 MIN. MAX = -24.59 58.75
 MN-250 0 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -22.37 53.75
 MN-250 4 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -25.64 53.75



SIDE IMPACT TEST (006)

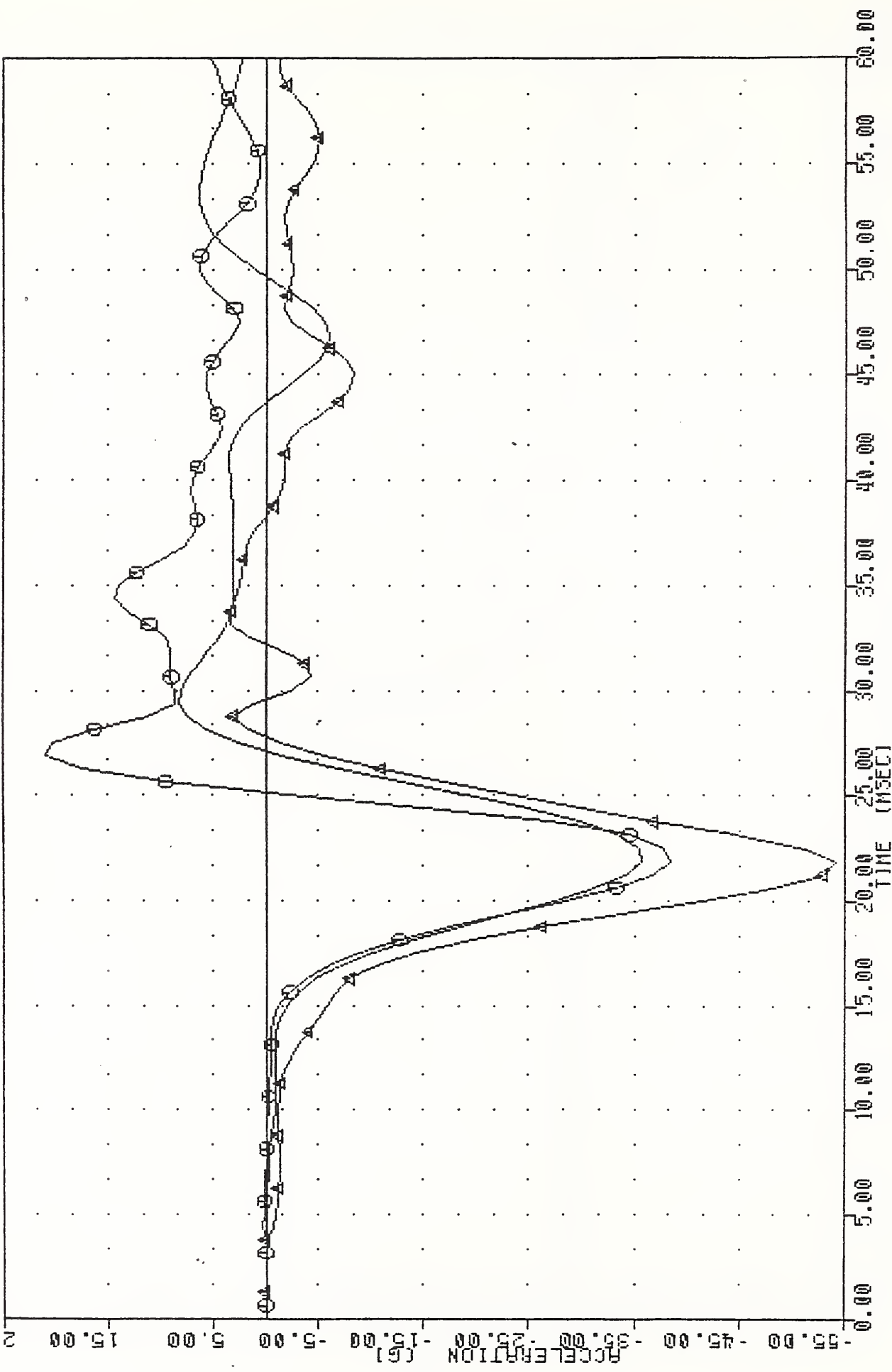
LOWER SPINE ACCELERATION Y AXIS - 1

HC	INC	310	JRA	16	3	ALI	8	PL	DAT	27	7-8	15
T12YGH	FILTER = H3RI	136/	189/	-50	MIN, MAX =	-24.41	0	25.63	6.74	58.75		
MN+2SD	FILTER = H3RI	136/	189/	-50	MIN, MAX =	-22.37	0	25.63	13.54	53.75		
MN-2SD	FILTER = H3RI	136/	189/	-50	MIN, MAX =	-25.84	0	25.63	4.85	53.75		



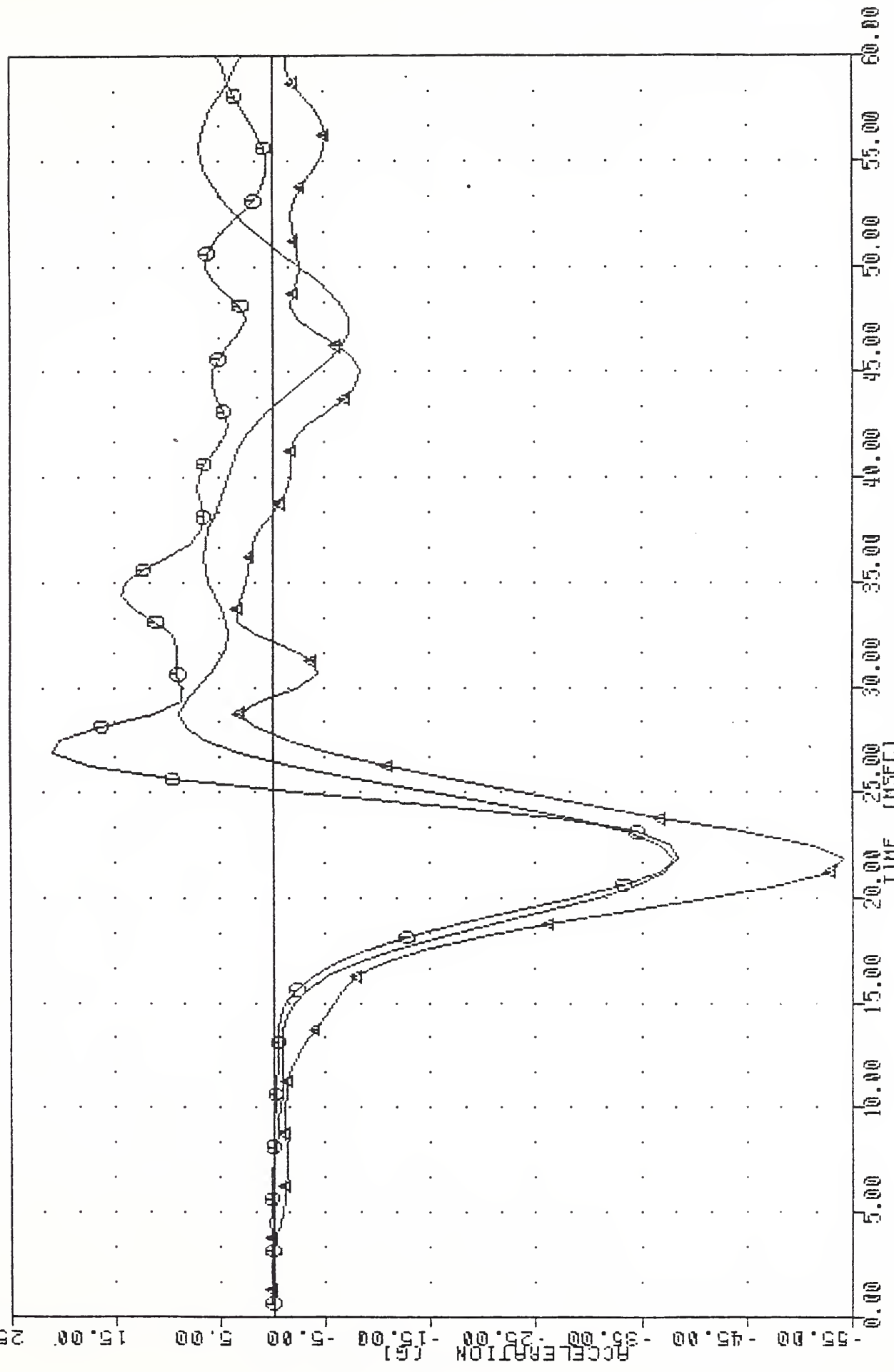
SIDE IMPACT TEST (006)
LOWER SPINE ACCELERATION Y AXIS - A

.ITC 92 . IUC 5 310 JRA 12 L 80 JAL 8 PL 27 27 80 15 21
 LURYG1 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -35.65 8 21.25 28.75
 MN-2SD 0 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -38.44 8 21.25 26.25
 MN-2SD 4 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -54.08 8 21.25 33.13



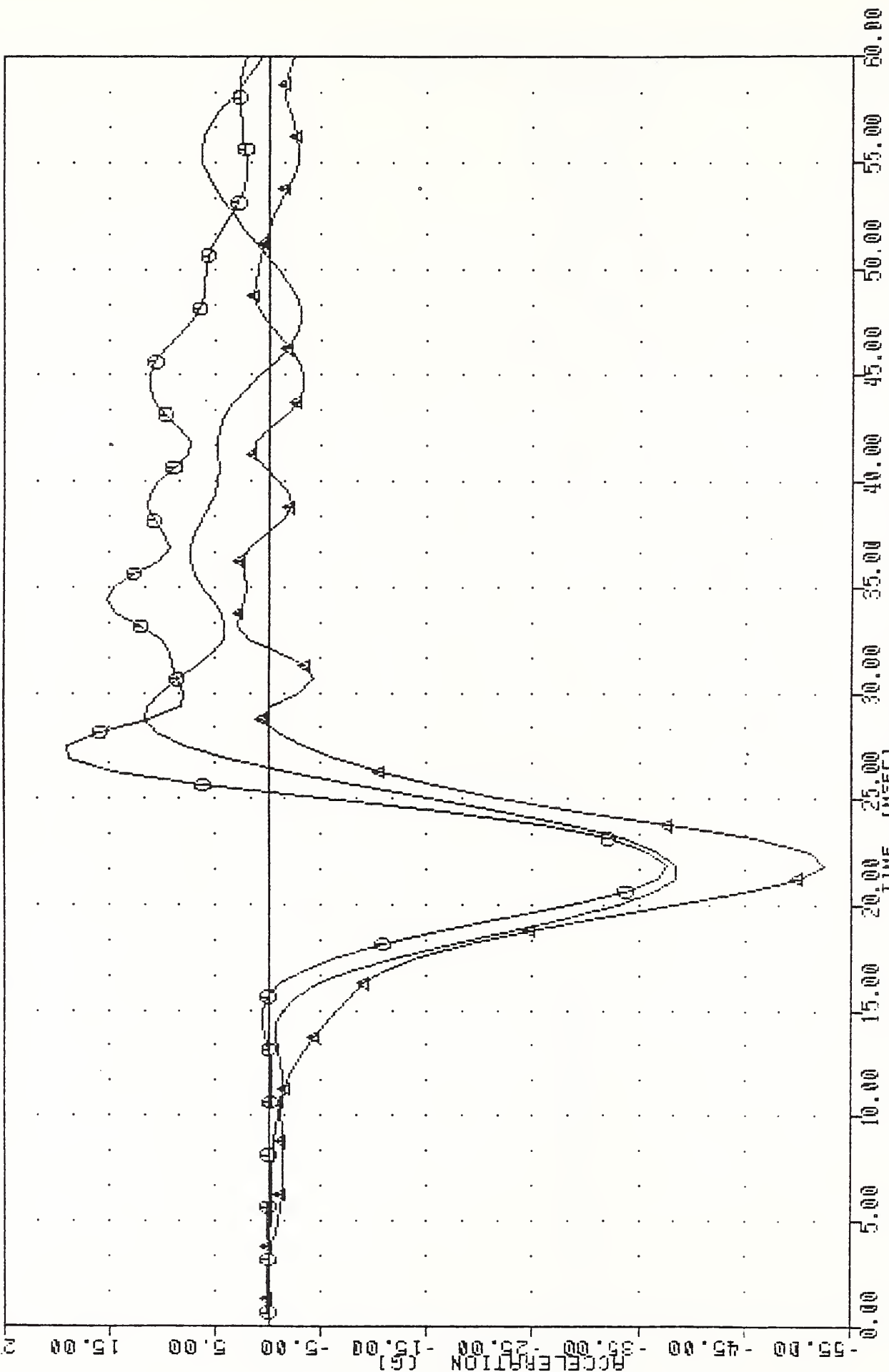
SIDE IMPACT TEST (U02)
 LEFT UPPER RIB ACCELERATION Y AXIS - 1

.ITC 92 . IUC 5 . 310 84 27 15 21
 LURYGA 136/ 189/ -50 MIN. MAX = -38.06 8 -38.06 8 8.71 8 28.13
 MN+2SD 0 136/ 189/ -50 MIN. MAX = -38.44 8 -38.44 8 20.92 8 28.25
 MN-2SD 4 136/ 189/ -50 MIN. MAX = -54.08 8 -54.08 8 3.31 8 33.13



SIDE IMPACT TEST (U02)
 LEFT UPPER RIB ACCELERATION Y AXIS - A

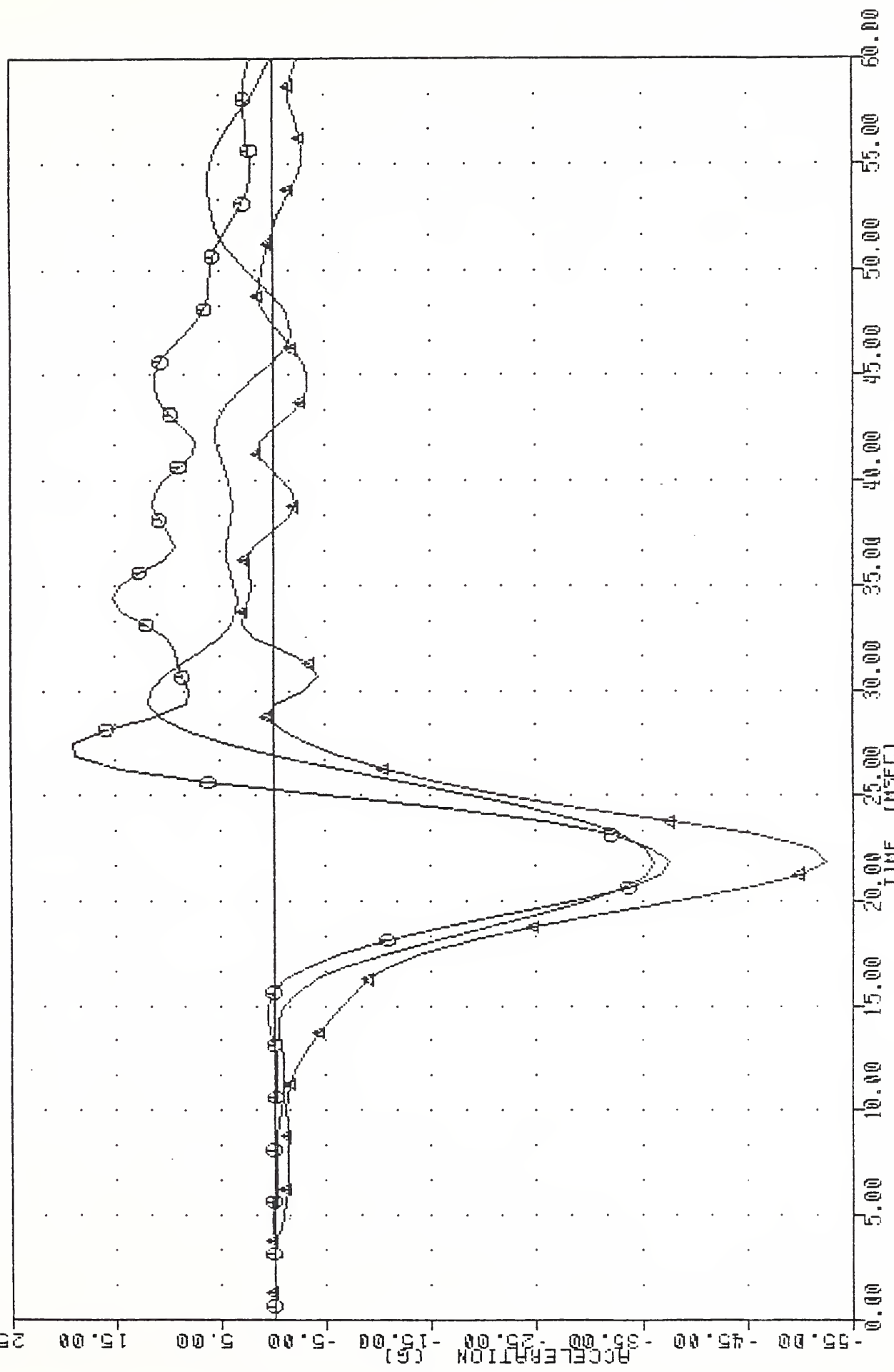
PLU	DAL	27	100	84	15	0	11
310	136/	189/	-50	MIN. MAX	-38.58	0	21.25
310	136/	189/	-50	MIN. MAX	-37.66	0	21.25
310	136/	189/	-50	MIN. MAX	-52.52	0	21.25



SIDE IMPACT TEST (U02)

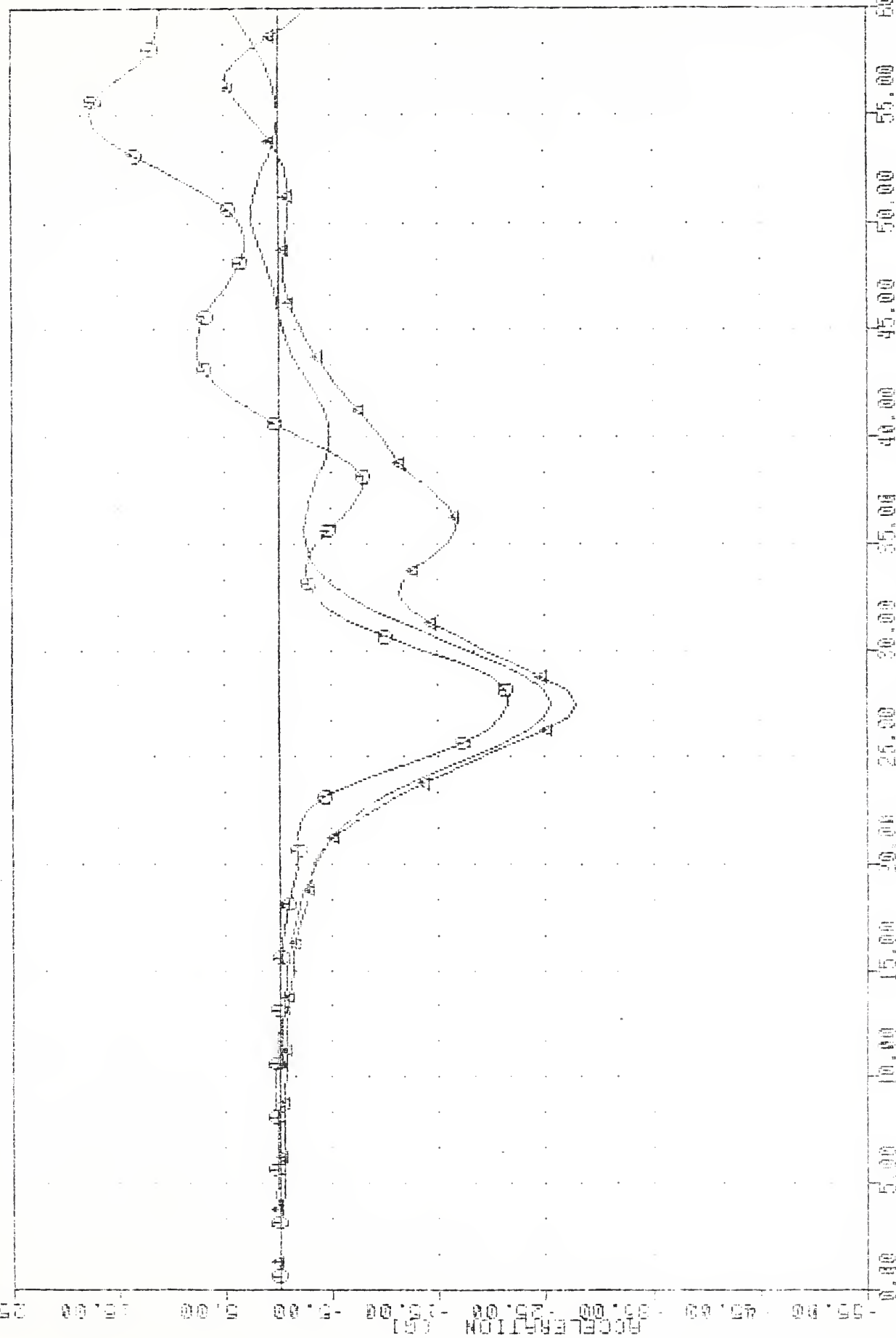
LEFT LOWER RIB ACCELERATION Y AXIS - 1

3TC 92 100 510 310 32 85 85 27 15.00:37
 LLYGA FILTER : HSRI 136/ 189/ -50 MIN, MAX = -36.19 11.75 28.75
 MN-250 0 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -37.66 19.00 26.87
 MN-250 4 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -52.52 2.94 32.50



SIDE IMPACT TEST (U02)
 LEFT LOWER RIB ACCELERATION Y AXIS - A

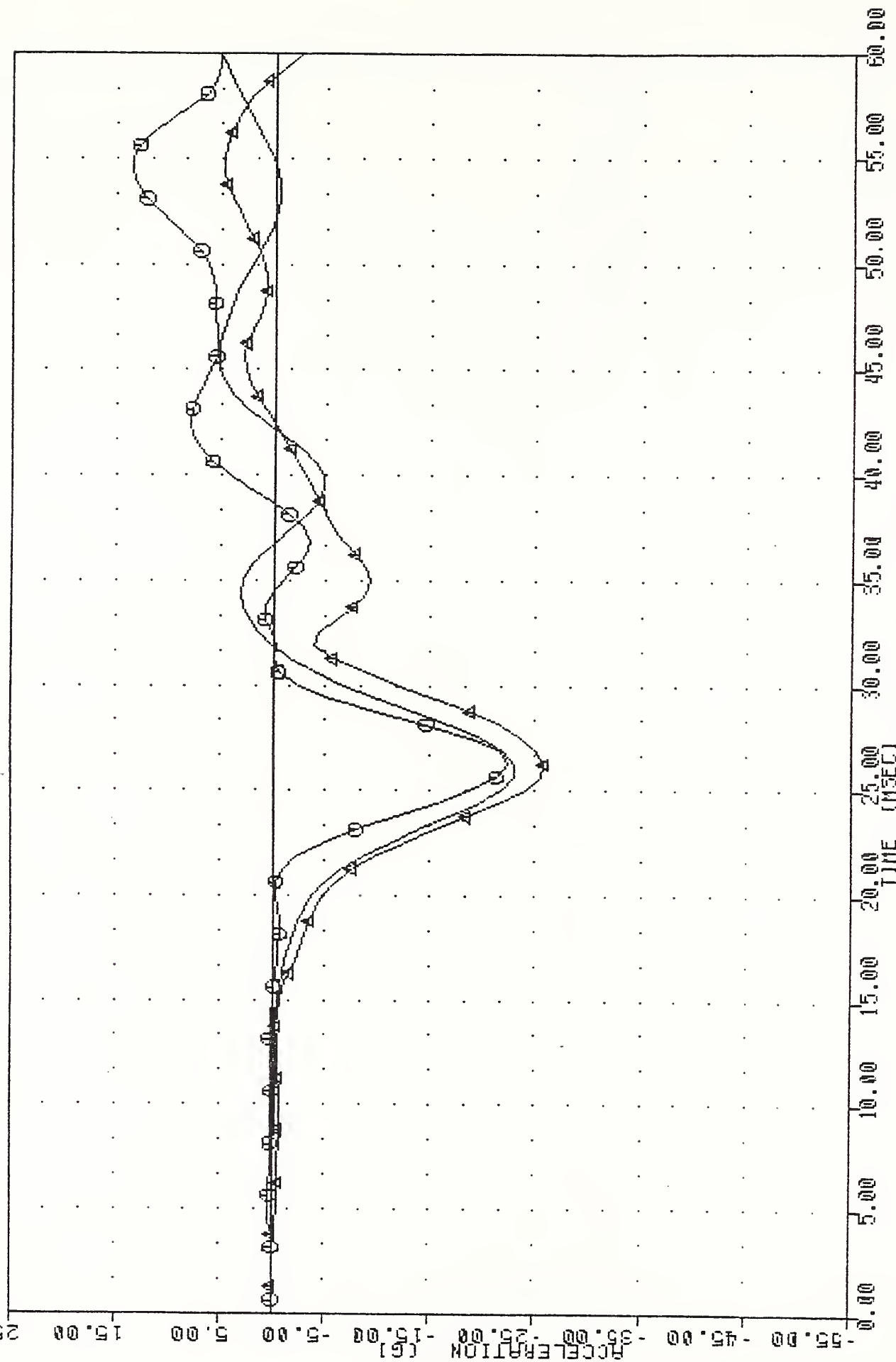
— 20 —



09-000000

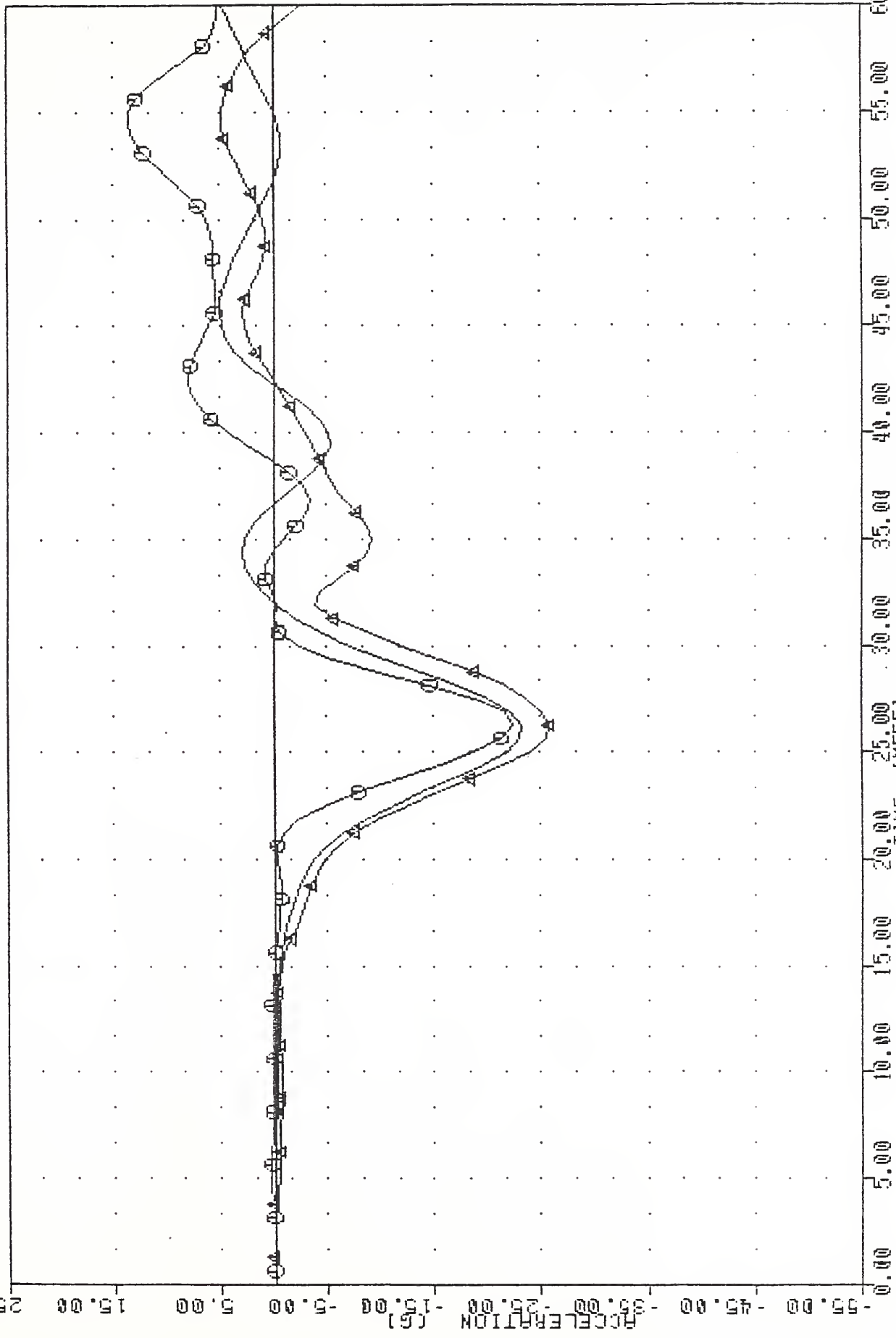
Figure 1 consists of 12 subplots, labeled (a) through (l), arranged vertically. Each subplot shows a time course of a specific physiological parameter over a 10-minute period. The x-axis for all plots represents time in minutes, from 0 to 10. The y-axis represents the value of the parameter. Each plot includes a horizontal line indicating the baseline value and a solid line showing the response to a stimulus. Error bars representing standard error are shown for each data point. The parameters are: (a) HR (b/min), (b) SV (ml), (c) CO (l/min), (d) MAP (mmHg), (e) PVR (mmHg), (f) SVR (mmHg), (g) PPA (mmHg), (h) PVP (mmHg), (i) PVP/PPA, (j) PVP/PPA, (k) PVP/PPA, and (l) PVP/PPA.

92 100 5 310 136/ 189/ 12 L 84 ALJ 84 PL 27 15 34
 T12Y61 FILTER : HSRI 136/ 189/ 50 MIN, MAX = -23.10 5.95 60.00
 MN-250 0 FILTER : HSRI 136/ 189/ 50 MIN, MAX = -22.37 13.54 53.75
 MN-250 4 FILTER : HSRI 136/ 189/ 50 MIN, MAX = -25.84 4.85 53.75



SIDE IMPACT TEST (U02)
 LOWER SPINE ACCELERATION Y AXIS - 1

JIC 92 1100 310 080 02 80 27 15 29
 T12YGA FILTER : HSRI 136/ 189/ -50 MIN, MAX = -23.25 0 25.63 60.00
 MN-250 0 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -22.37 0 25.63 53.25
 MN-250 4 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -25.84 0 25.63 53.75



SIDE IMPACT TEST (U02)
 LOWER SPINE ACCELERATION Y AXIS - A

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